OCTOBER 26, 1959

PURCHASING

The Methods and News Magazine for Industrial Buyers

Top purchasing executives of Rover Co. Ltd.: H. Lamb, A. E. Smith, and G.S. Orr

Special Report

Materials Management in the British Auto Industry

page 69

Also in this issue: **How to Report Purchasing Profits And Other Timely Articles**

A CONOVER-MAST PUBLICATION

Table of Contents..... Page 5

SEVENTY-FIVE CENTS

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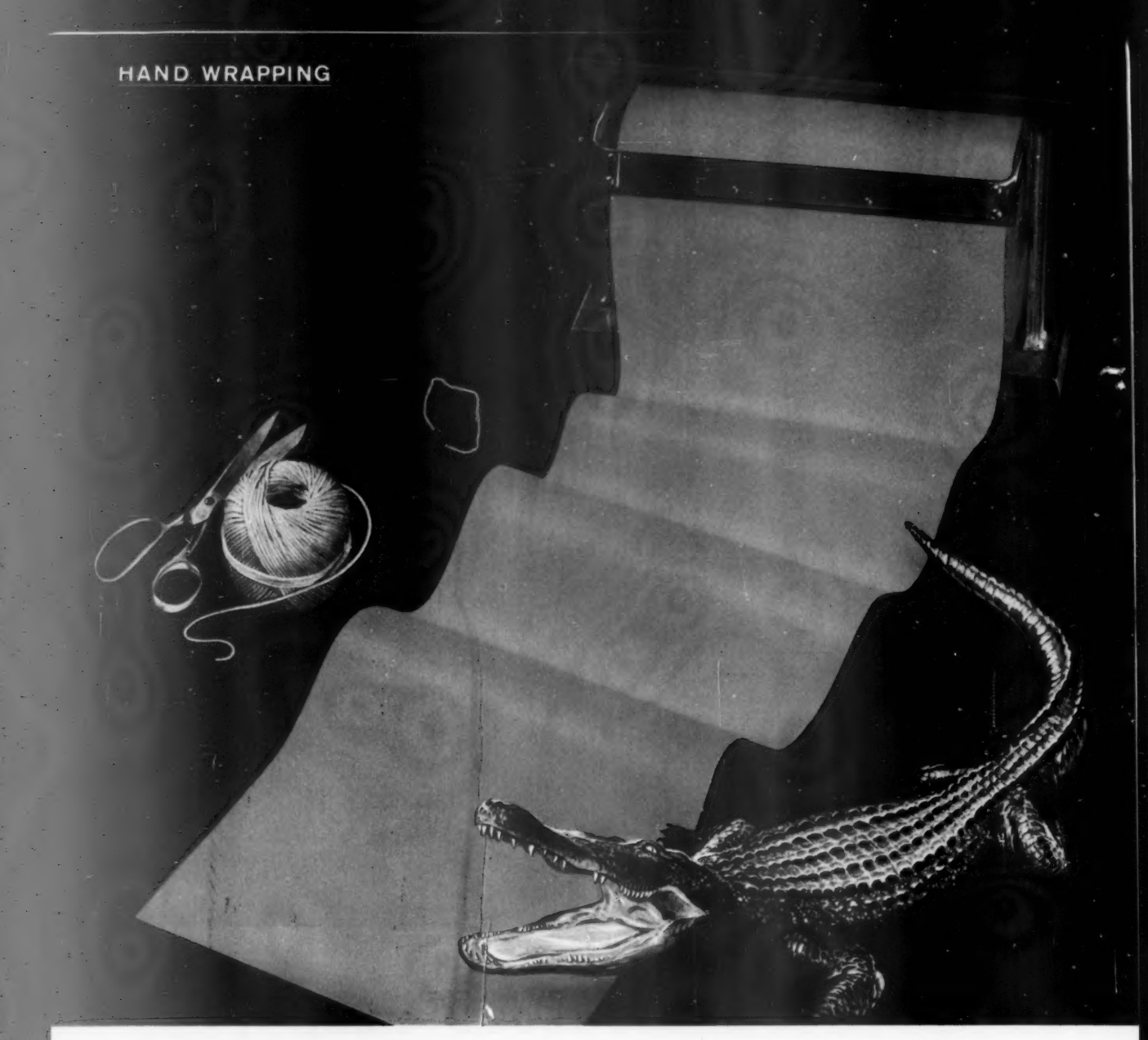

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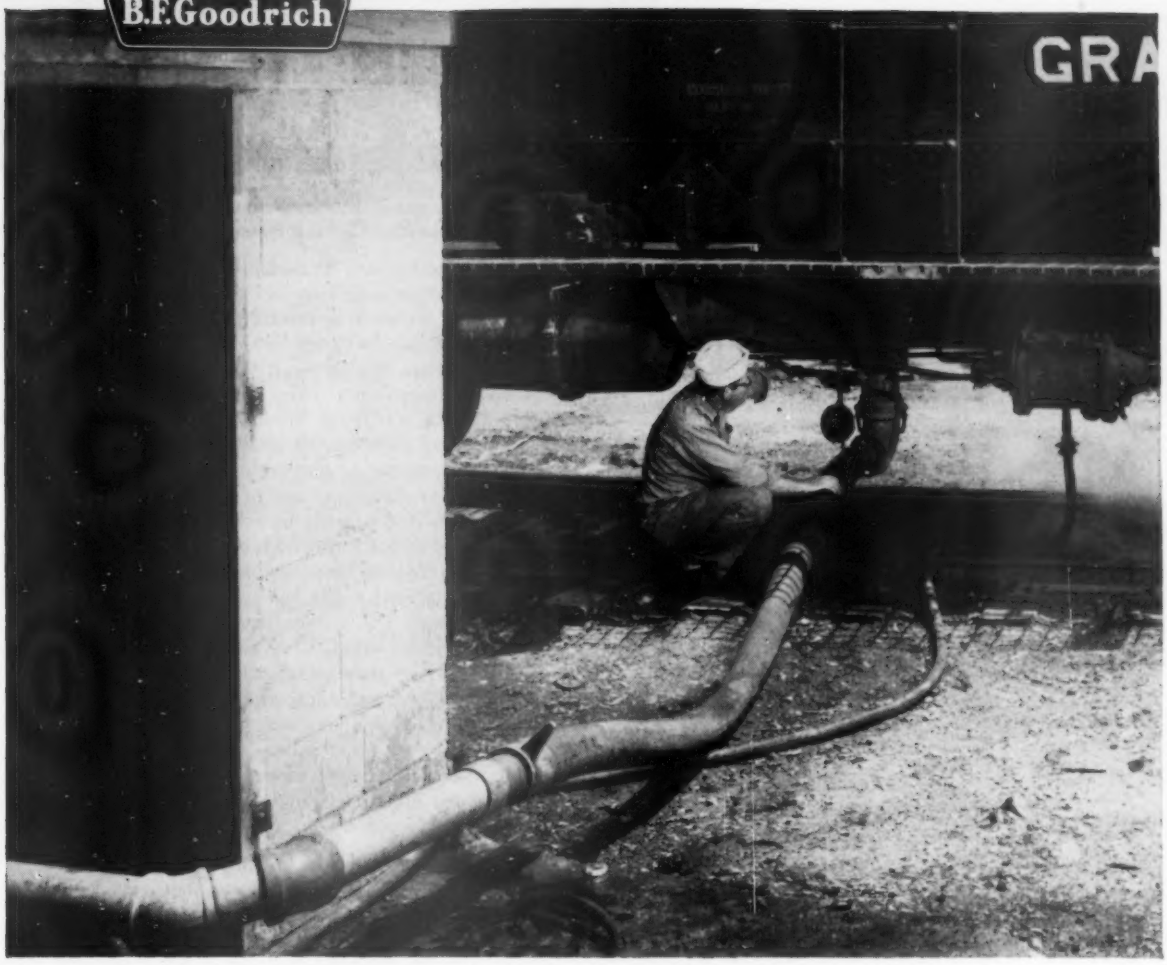
Ask your local paper merchant for samples and further information.

Southern Kraft Division **INTERNATIONAL PAPER** New York 17, N.Y.

B.F.Goodrich



Pass the syrup— a carload at a time

B.F.Goodrich improvements in rubber brought extra savings

WORKERS at this candy company were having a terrible time unloading corn syrup through metal pipe. Getting the tank car in just the right spot to make the hook-up took a lot of time. The rigid pipe was heavy, hard to maneuver, a strain to connect.

Company engineers knew that rubber hose would be easier to handle, but would rubber change the taste of the syrup? They took the problem to a B.F.Goodrich distributor, and a special hose was developed.

The rubber B.F.Goodrich used for the lining has no odor, doesn't affect the taste of the syrup. The cover is extra tough, can be dragged over rough ground, can stand all sorts of weather.

The B.F.Goodrich hose has been on the job two years now, is expected to last five more. Because it's so much more flexible than pipe, it can be connected in a hurry. No need to jockey tank cars back and forth. It's faster to hook up, too, because special handles are built into the couplings, eliminating the need for wrenches.

Your B.F.Goodrich distributor has complete information on the B.F. Goodrich hose described here. And, as a factory-trained specialist in rubber products, he can answer your questions about the many products B.F.Goodrich makes for industry. *B.F. Goodrich Industrial Products Co., Dept. M-689, Akron 18, O.*

B.F.Goodrich ***industrial rubber products***

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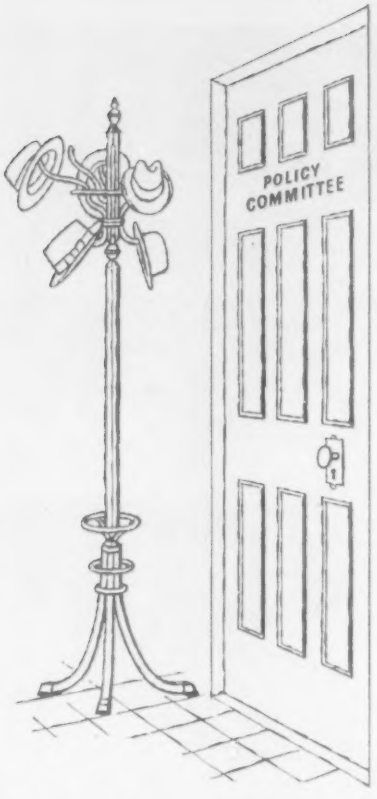
management must act



There is no doubt about it.

In recent years the responsibilities of American management have multiplied tenfold, and the areas in which decisions must be made are expanding with every passing day.

For example, just this morning our purchasing agent came to my office with a problem that, at first glance, seemed to be exclusively within his jurisdiction. Yet, as he talked and explained the situation, I could see where our policy committee was going to be forced into establishing procedure in an entirely new area. Briefly, here is the problem Jim Harkness laid in my lap. In the past several months, Jim said, various of our product managers have been requesting purchasing to buy foreign-made components to be used in the production operations carried out in their departments. These products, Jim went on, were somewhat cheaper than similar products made in the United States. Of course, the product managers were looking only at costs and were not considering such things as service and quality.

Also, Jim said, the purchasing of these imported products was presenting new problems to him as purchasing agent—problems that he sincerely felt should be answered by top management.

Problem number one, he said, showed up when one of our long-time suppliers said that if he continued to lose our business because of our purchase of a foreign-made competitive line, he had no other alternative than to shut down several machines and lay off their operators. This, Jim felt, could be the beginning of a vicious circle—the laid off men would curtail their buying and even though small at the present time, if the same thing happened to others of our suppliers, and in other segments of industry, the resulting ripples could turn into waves which would be felt throughout our entire economy. He also pointed out that, in his opinion, the purchase of imported goods had serious ramifications in other areas. The foreign manufacturer contributed absolutely nothing to the United States in return for his orders—he paid no property or corporate taxes, wasn't bothered by State levies and didn't have to pay personal income tax on his profits. As far as he could see, Jim said, the only result was that the rest of us would have to pay higher taxes all around in order to subsidize the foreign manufacturer.

Jim also declared that he felt imports damaged us in still another way. Not only do they represent the loss of domestic markets—high import figures also indicate the loss of export markets. As an example of this, he explained that U.S. brass mills formerly did a large export business. Today they have lost the export business and suffer seriously from imports. The total loss in this industry is, therefore, the loss of exports plus imports.

It was these conclusions, Jim said, that had brought him to my office. When his actions as purchasing agent began to have such far reaching consequences he felt that management should assume some of the added responsibility.

Since Jim left, I've been thinking of the things he said—and I think he's right. I'm going to recommend that our policy committee establish a buying procedure stating that we as a company will place our requirements for our United States operations with American sources in all cases where U.S. products are available. I cannot see how we can afford to do otherwise.

PURCHASING

The Methods and News Magazine For Industrial Buyers

OCTOBER 26, 1959
VOLUME 47, No. 9

B. P. MAST, *Chairman of the Board*
B. P. MAST, JR., *President*
RAY RICHARDS, *Publisher*

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Handling a hot job at a cool $1400-a-year saving

They don't spare the belts around busy foundries like this one in the Midwest. And their shakeout conveyor was in a specially hot spot—handling smoking sand at temperatures well over 250°F., occasionally reaching a near-incandescent 450°F. Little wonder belt life averaged only 43 days.

But that was before the G.T.M.—Goodyear Technical Man—appeared on the scene. His recommendation: Style 6740 conveyors especially designed to resist the usual cracking, charring effects of "cooking" heat.

The results: carefully kept records showed a succession of 5 of the G.T.M.'s belts averaging 154 days apiece—*more than 3½ times previous service.* And that meant a yearly saving of exactly $1,435.40.

Isn't this the kind of dollars-and-cents improvement you'd like to make in your shop? If it takes industrial rubber, the G.T.M.'s your man. Contact him through your Goodyear Distributor—or write Goodyear, Industrial Products Division, Akron 16, Ohio.

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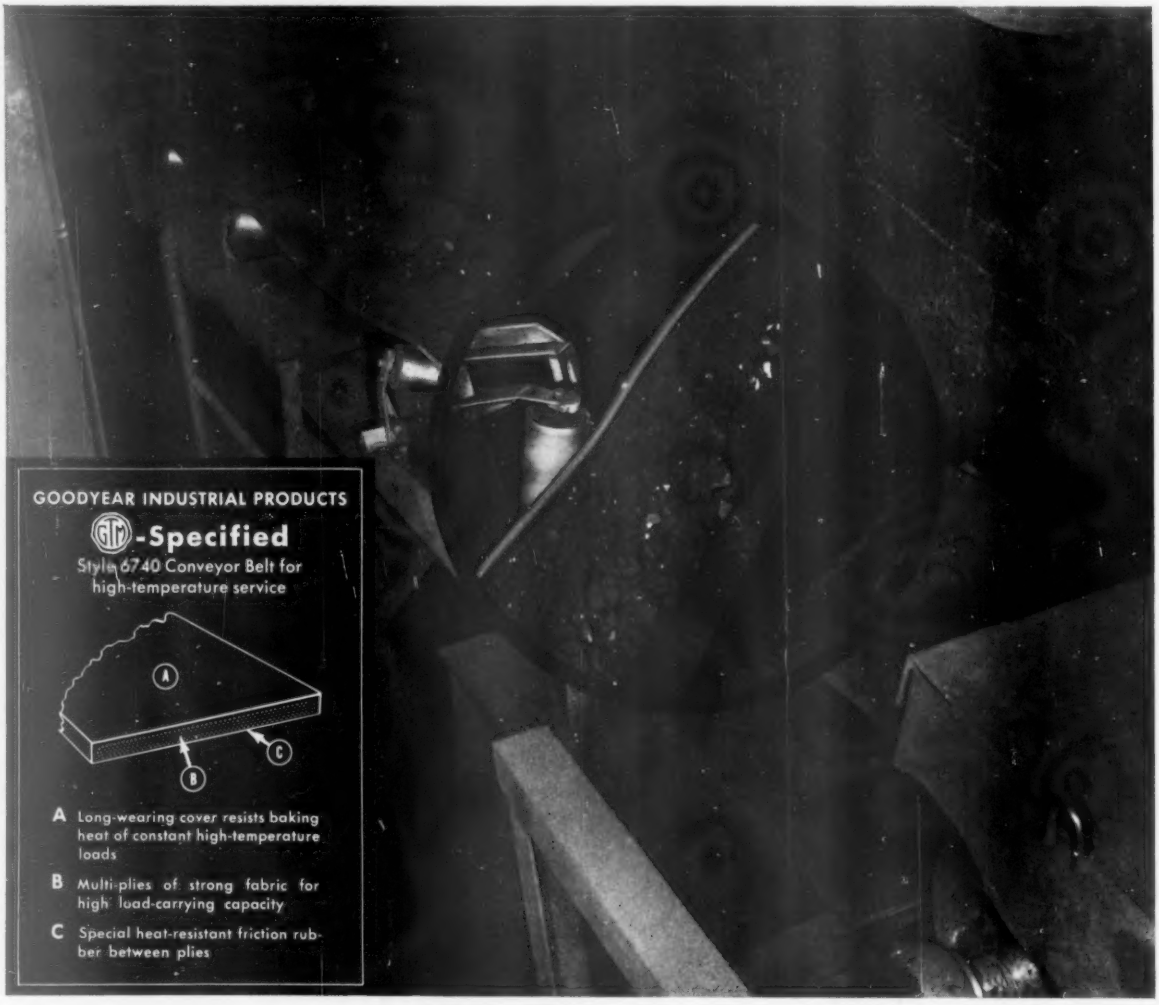

CONVEYOR BELTS BY

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Straws in the Trade Wind

► **STEEL PRICE CUTS OUT**—Steel companies have a "moral obligation" to maintain present prices even if steelworkers would accept wage cuts, says Tom Patton, president of Republic Steel. He notes that the steel companies are hard pressed to find money to expand and maintain facilities. Despite the record prosperity of the past decade, steel earnings have been far from spectacular, he says—with the industry's return on invested capital consistently lower than that of many other industries.

► **UNIFORM SHIPPING CONTAINERS**—A strong move is underway for adoption of uniform shipping containers. These containers could be shipped interchangeably by rail, truck, water, and air. P.A.'s could make large savings if the physical barriers that prevent the different forms of transportation from offering integrated coordinated freight service were eliminated.

► **BUSINESS IN POLITICS**—Most business executives feel that more companies should take an active part in government and politics. According to a recent survey, a majority of manufacturing men believe that the eventual welfare of industry depends on the actions of federal, state, and local governments. And unless businessmen participate in the decision-making process, they say, industry will be at the mercy of legislative bodies controlled by aggressive anti-business minorities.

► **GOOD VENDOR RELATIONS**—Here's an idea to boost your vendor relations program: why not make a special occasion of the sales call of the 1000th, 10,000th, or 100,000th vendor to visit your company. General Electric's missile and space vehicle department did and received a lot of favorable publicity as a result. Naturally the vendor was happy too.

► **TOO MUCH CONCENTRATION?** — Has there been an increase in concentration among manufacturing industries in recent years? The answer is no, according to a survey by the National Industrial Conference Board. The NICB found that industry for the most part, was highly competitive in 1954—and that there was no pronounced trend toward monoply between 1947 and 1954.

► **STEEL AND COAL**—One of the major industries most affected by the steel strike is bituminous coal. In one month alone, bituminous coal production fell 12.4% from the same period in recession-hit 1958, says Standard & Poor's.

► **AT THEIR OWN GAME**—Office equipment manufacturers—plagued by foreign competition—are fighting back. They're setting up foreign subsidiaries in Europe and then importing the goods made by these subsidiaries. The result: they can sell in the U.S. at the same price levels as foreign office equipment manufacturers.

► **THE CITIES ARE LEASING**—A new trend in municipal purchasing departments—equipment leasing. With budgets stretched to the bone, city fathers just don't have the cash to buy more goods. Therefore, they're turning to leasing for all types of equipment — from typewriters to dump trucks.

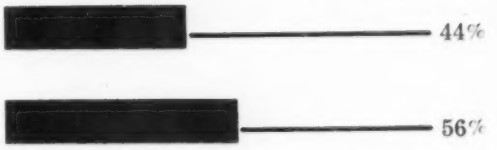
► **PLAYING BOTH ENDS**—At a recent district conference of the N.A.P.A., one of the speakers asked purchasing agents how many were buying imported goods. About 60% raised their hands. He then asked P.A.'s how many of their companies were being hurt by foreign competition. The same number said yes.

► **NEW PRODUCT PLANNING**—Who's responsible for new product planning in your company? A survey by the American Management Association shows that the marketing department is in charge at 43% of the companies queried. Purchasing appeared infrequently in the responses of top management men when asked who was in on new product plans. This means that in most companies there's still room for the P.A. to show his management how he can be more effective at the outset of new marketing programs.

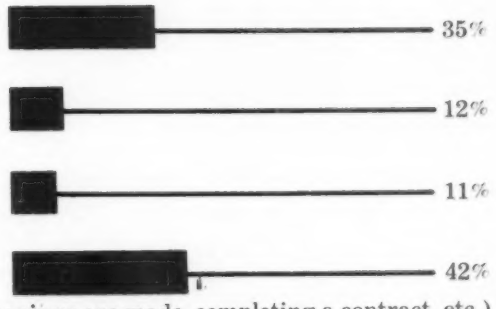
Can Purchasing Prove It's a Profit Making Job

Although many P.A.'s firmly believe that purchasing is a profit making job, it's sometimes hard to prove this to management. Exactly how are purchasing profits determined and measured? And how are such profits reported to management? We asked a representative cross-section of purchasing agents a number of questions about this subject. An analysis of the problem appears on p. 13, while the answers to the survey follow below:

1. Do you now report to management on a regular basis the savings made in day-to-day buying?

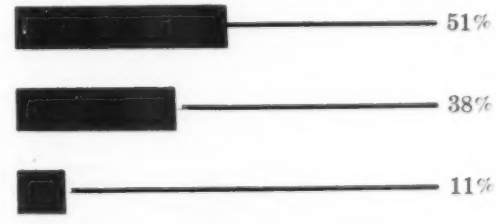


2. How often do you make these reports?



(occasionally, when savings are made, completing a contract, etc.)

3. How do you report the savings?



4. Do you use any special form to report detailed facts of individual savings?

Look what paper is doing now:

✶ New Tri-plex bag paper
✶ Protection for X-ray workers
✶ Envelopes with sales hooks

✶ **Tri-plex is an unusual combination** of *three* special Riegel papers laminated to form one sheet with exceptional rigidity. It is grease-

proof, highly moisture resistant and easy to print. Perfect for semi-rigid bags that must hold their shape and stack well. Where can *you* use new Riegel Tri-plex?

✶ **Protective aprons** for persons exposed to radioactivity are leather-like vinyl heavily filled with lead. The material is cast and processed on a belt of special Riegel casting

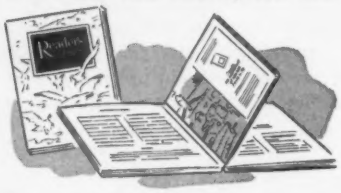
paper that must be strong and withstand repeated passes through a high temperature oven. When peeled off at end of process it leaves a smooth, matte surface on the vinyl. An idea here for you?

✶ **Eye-catching envelopes for fishhooks** recently lured us to an amazing collection of special sales promotion envelopes and wallets . . . a catalog full of sizes and shapes, with unlimited colors and printing. Turns out they're made of Riegel's Red Wallet, and other strong Riegel papers. We'll be happy to get you a copy, too. Just write.

✶ **Have you a problem** that may be solved by a better paper? Just write to Riegel Paper Corporation, P. O. Box 250, New York 16, N. Y.

✶ How "Reader's Digest" bound 36-page Ford ad
✶ Makings for a good smoke
✶ Color ideas that stick

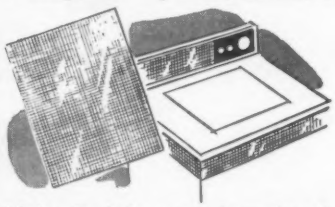
✶ **Biggest ad ever,** that 36-pager by Ford in May **Reader's Digest,** has a neat little binding idea that



lets you zip out the ad as a separate, complete booklet. 1,400 miles of perforated strips of a special bright, strong, fast-gluing paper were used . . . product of Riegel's new "Carolina Belle" board machine.

✶ **A pipe man's loyalty** to his favorite smoke is a wondrous thing. To win and hold this loyalty, many tobaccos replaced tin cans with Riegel's Pouchpak*. It's a lamination of foil, glassine and polyethylene, colorfully reverse-printed. *T.M.

✶ **Life-time shine** for auto medallions, appliance panels, trim strips, etc. now comes from a wondrous development in plastics, metallized



Mylar. Peel the paper from the adhesive back, and press on. The paper is a specially coated, **peelable** Riegel release paper.

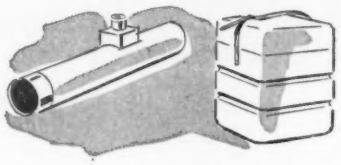
✶ **Can we do something unusual** for you, too? Write Riegel Paper Corporation, P.O. Box 250, New York 16, New York.

✶ Now: Metallized Glassine
✶ Tough plastic for missiles
✶ Next year's love story

✶ **Metallized glassine is here...** shiny, strong. Ideal for attractive, *low-cost* packaging of ice cream sticks, candy . . . and what is *your*

product? Base is a special Riegel glassine, made for converters who do the metallizing. We'll gladly tell you where you can get it.

✶ **Impact resistance** in light plastic parts comes from fiberglass reinforcement made on a *paper* machine. Impregnated with resins, the ready-to-mold Riegel "Glascel" has



superior uniformity. Unusual use is: lens assembly housing in guided missile, where light weight and high impact strength are important. Dollar-minded designers will find tooling costs lower when they use Glascel.

✶ **Valentines for next year** are being printed right this month on a bright-white paper made by our new 236″ paperboard machine "Carolina Belle."

✶ **Can we do something unusual for you, too?** Write Riegel Paper Corporation, P.O. Box 250, New York 16, New York.

Now...what can we do for you!

Riegel

TECHNICAL PAPERS FOR INDUSTRY

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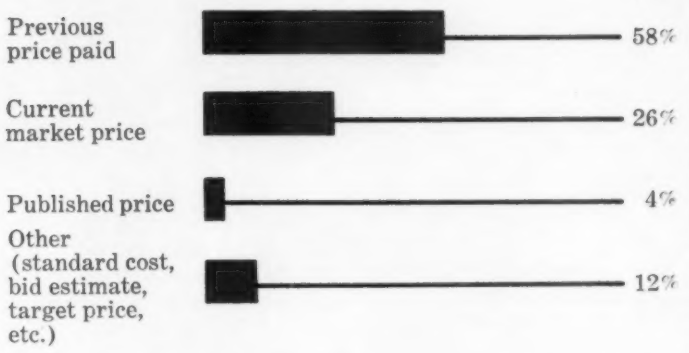
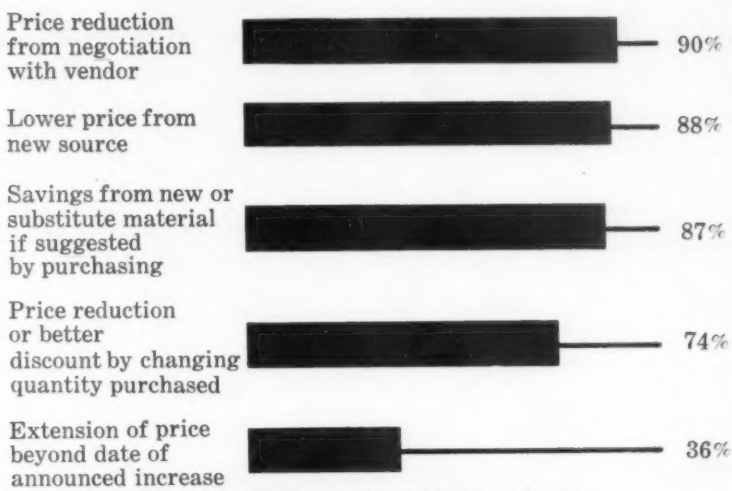
Purchasing Opinion

5. In order to determine actual savings, with which base figures do you compare your purchase costs?

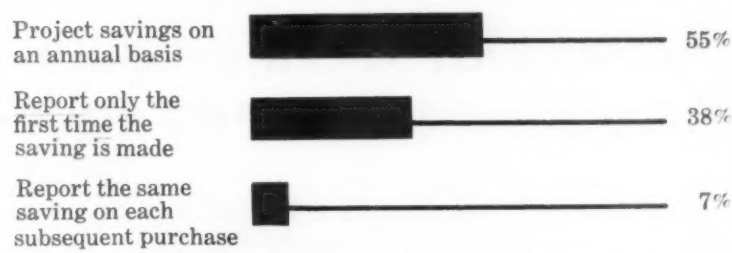


6. Which of the following do you consider a purchasing profit (or include in your report)?

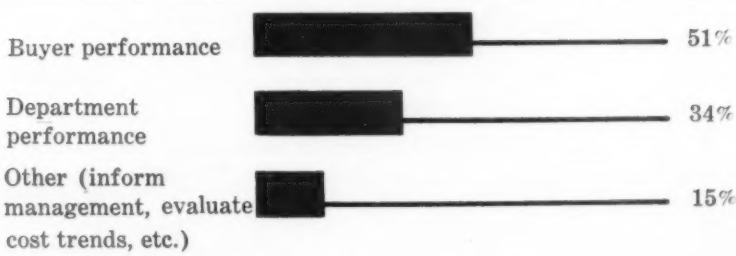


(total is more than 100% because some respondents checked more than one answer)

7. For materials purchased repeatedly, do you:



8. Do you use these reports to compare:



(SPECIAL: For a study of this timely subject, don't miss the article starting on page 13.)

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NATIONAL STEEL CORPORATION

Special Industry Report:

Purchasing—As a Profit Making Job

Indications are that purchasing is not doing as good a job as it should when it comes to informing top management of its role as a profit maker. But P.A.'s who do report savings find it's not only a helpful technique to increase purchasing's status but can also be used as a guide to measure performance.

THE ONLY justification for a purchasing department, other than organizational efficiency, is its ability to contribute to profit. Purchasing agents themselves have worked hard to get this fact across to management. They should welcome the chance to prove themselves. Yet 56% of P.A.'s recently surveyed do not report savings to management. (See Purchasing Opinion, Page 9.)

Why?

A respondent who does not make savings reports commented: "Making savings is a part of my job—an important responsibility in which I enjoy the complete confidence of management." Over and over P.A.'s said, "it's all part of the job."

But doing your job and letting your boss know what you are doing are two different things. If purchasing claims it contributes to profit you can expect that someone is going to ask "How much?" It isn't a question of whether you have the confidence of management but whether you have the right to keep management in the dark.

There is probably no purchasing agent who is consciously trying to keep his management "in the dark," but there are many who are reticent about "showing off" their performance. Others believe that results are self-evident.

Only Purchasing Knows

This, however, is not the case. The purchase price of a product in no way indicates what it might have cost. Sales figures tell what the sales department is doing. Manufacturing costs reflect production. But only purchasing can determine accurately how much money it saves.

The savings report is the only way purchasing can keep management aware of the profit contribution it makes in day-to-day buying. Purchasing needs a quantitative measure. A factual report which clearly measures in dollars and cents how much is saved on specific orders or materials is one of the most direct means of doing this.

In the small company, where information flows freely, reporting such savings may be casual, almost unnoticed. The larger organization requires more formal methods. Significantly, most of the 27% Purchasing Opinion respondents who report using special forms for this purpose are from larger companies.

". . . We'd like to present a skit in which I play a crafty P.A., and my boss here, an inexperienced peddler. . ."

Thirty-four percent of those who report savings to management also use them to compare or evaluate department performance. Purchasing agents limited by small staffs or inadequate budgets may find this a useful approach. As one purchasing executive sees the problem: "The purchasing department has long been considered a necessary evil. This meant we've had to keep personnel down to a minimum. We are still overly self-conscious and cost-conscious about our own operations."

The purchasing department of a large, diversified tool and valve manufacturer meets this problem by comparing annual savings with the cost of department operations. "Our savings generally run from two to three times operating cost," the P.A. says. Figures like these are strong support for budget requests.

To be most effective saving figures should be projected on an annual basis. Of those who do report savings, however, 38% report them only the first time they are made. For one-time purchases there is, of course, no alternative. Applying this method to repetitive items means that only new savings will show up. Although these can be used to compare purchasing performance between given periods of time no total figure will be available to compare with actual departmental

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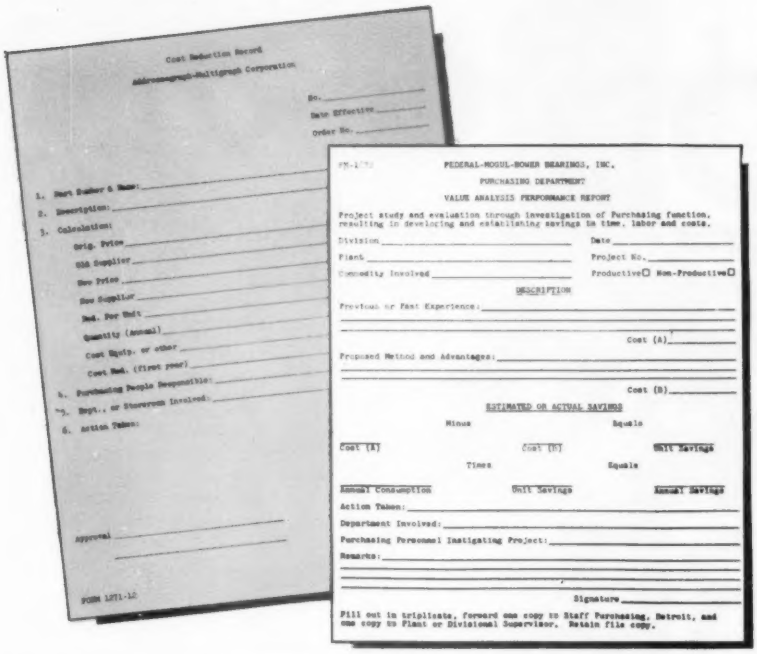

Cost Reduction Record

Addressograph-Multigraph Corporation

No.
Date Effective
Order No.

1. Part Number & Name:
2. Description:
3. Calculation:
Orig. Price
Old Supplier
New Price
New Supplier
Red. Per Unit
Quantity (Annual)
Cost Equip. or other
Cost Red. (First year)
4. Purchasing People Responsible:
5. Dept., or Storeroom Involved:
6. Action Taken:

Approval

FORM LTT1-12

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PURCHASING DEPARTMENT

VALUE ANALYSIS PERFORMANCE REPORT

Project study and evaluation through investigation of Purchasing function, resulting in developing and establishing savings in time, labor and costs.

Division Date
Plant Project No.
Commodity Involved Productive☐ Non-Productive☐

DESCRIPTION

Previous or Past Experience: Cost (A)

Proposed Method and Advantages: Cost (B)

ESTIMATED OR ACTUAL SAVINGS

Minus Equals

Cost (A) Cost (B) Unit Savings

Times Equals

Annual Consumption Unit Savings Annual Savings

Action Taken:
Department Involved:
Purchasing Personnel Instigating Project:
Remarks:

Signature

Fill out in triplicate, forward one copy to Staff Purchasing, Detroit, and one copy to Plant or Divisional Supervisor. Retain file copy.

Typical cost reduction report forms used by the purchasing departments at Addressograph-Multigraph Corporation and Federal Mogul Bearings, Inc.

operating costs.

Effective savings reports must be realistic and accurate. "What is a saving?" asks the purchasing agent for a well-known arms manufacturer. There is high agreement among Purchasing Opinion respondents that price reductions obtained by using a new vendor, by negotiation, or from value analysis and standardization suggestions are real savings. There is less agreement on how to determine these savings, and what to use as a basis of comparison.

Of those who replied to questions of the Purchasing Opinion poll, 58% compare the purchase price to the previous price paid. Twenty-six percent compare it to the market price while only four percent use a published price as the base. Twelve percent indicate they use more than one criterion for price comparison or mention others, such as: standard price, cost on January 1, average of quotations, etc.

Purchasing agents agree on one point: there is no single basis for price comparison that can be used to determine savings. This basis will vary with the product and with the market in which it is sold. A true savings is the difference between the price actually paid and the price that would have been paid had there been no purchasing effort expended on the order.

For repeat orders the simplest way to calculate such a saving is to compare the latest price paid to the previous price. Replies to Purchasing Opinion indicate this is the most common method. Yet certain exceptions show how industry pricing practices and market fluctuations may complicate this approach.

A New England metalworking P.A., for example, reports that he negotiated a 10% discount on a standard line of cutting tools bought from an established distributor. The discount was calculated from published prices normally paid by large users throughout the area. This 10% was certainly a legitimate reportable saving and was therefore included in the purchasing department's savings report and projected on an annual basis.

Loses Advantage

For competitive reasons, however, the discount became general in the area. It was offered by distributors of competing lines and it was made available to other buyers. Once this became evident the purchasing agent recognized that he was no longer making a saving and therefore deducted the balance of his annual figure from a subsequent saving report. In effect, a general price reduction had wiped out his advantage.

A large non-ferrous foundry consistently buys its casting metals at below published market prices. The difference between the two was regularly reported as a saving. As the purchase price appeared to fluctuate too regularly with the market price the metal buyer, after placing a large order, asked himself if he had really saved any money.

How Much Is Saved?

An investigation brought out that metal suppliers offered similar price reductions to other large quantity buyers. After discussing the problem at a purchasing department staff meeting, buyers decided that when metal is normally purchased for a price of, say, five cents per pound under the market price and the practice is not limited to one's own company no savings should be claimed. If, however, a certain metal is normally bought at the market price but by negotiation the price for a new order is brought below that, the difference is a legitimate saving. Similarly, if metal is purchased at six cents under the market price instead of the normal five, the extra cent is a true saving. And this would apply even if the market price had risen generally and the actual price were higher than that paid previously. (Turn Page)

GOOD TIME FOR HARD LOOKS

at needless chlorine costs

Columbia-Southern's manufacturing and servicing experience with quality chlorine may help you achieve appreciable savings on former costs. Isn't this the ideal time to see if your chlorine purchase and use practices aren't costing more than necessary?

Let's take the *quantity* of chlorine you are currently buying and handling. Is your operating volume most economically adapted to tank car, barge, ton tank, or cylinder delivery? Are you quite sure that new or projected changes in your products or processing won't change this picture? Do you have all the facts on completely up-to-date unloading techniques and equipment?

Let's look at the uniform *quality* of the chlorine you are receiving. Here again, Columbia-Southern can advise you with recognized authority as the country's leading merchant producer. As a matter of record, we have led in developing such vital improvements in chlorine transportation as the fusion-welded tank car, the 55-ton single unit car, the safety-dome platform, the industry's first large capacity barge fleet for inland waterways delivery, and other user economies or safety features.

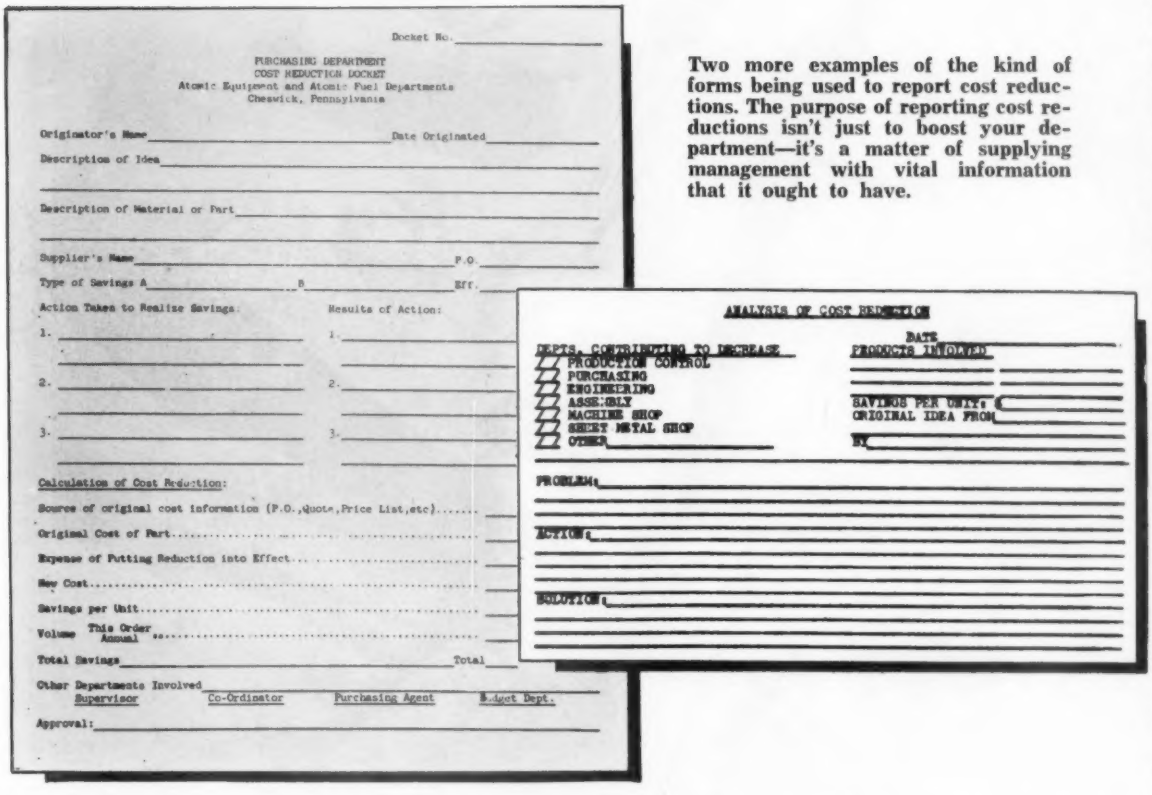
Our well-grounded Technical Service specialists, too, have helped customers save on needless chlorine costs. One valuable aid, for example, is their extremely thorough yearly inspection of your unloading, storage, and use operations. Isn't it simple good business, especially now, to see what savings they might work out for you? You may request their services either through our Pittsburgh address, or any of the fourteen Columbia-Southern District Sales Offices.

The Columbia-Southern Chemical Corporation, One Gateway Center, Pittsburgh 22, Pennsylvania. Offices in principal cities. In Canada: Standard Chemical Limited.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION A Subsidiary of Pittsburgh Plate Glass Company

For More Information Write No. 162 on Inquiry Card—Page 32

Special Industry Report:



Docket No. _____

PURCHASING DEPARTMENT
COST REDUCTION DOCKET
Atomic Equipment and Atomic Fuel Departments
Chesswick, Pennsylvania

Originator's Name _____ Date Originated _____

Description of Idea _____

Description of Material or Part _____

Supplier's Name _____ P.O. _____

Type of Savings A _____ B _____ Eff. _____

Action Taken to Realize Savings: Results of Action:

1. _____ 1. _____
2. _____ 2. _____
3. _____ 3. _____

Calculation of Cost Reduction:

Source of original cost information (P.O., Quote, Price List, etc) _____
Original Cost of Part _____
Expense of Putting Reduction into Effect _____
New Cost _____
Savings per Unit _____
Volume This Order / Annual _____
Total Savings _____ Total _____

Other Departments Involved _____
Supervisor Co-Ordinator Purchasing Agent Budget Dept.

Approval: _____

ANALYSIS OF COST REDUCTION

DATE

DEPTS. CONTRIBUTING TO DECREASE
- PRODUCTION CONTROL
- PURCHASING
- ENGINEERING
- ASSEMBLY
- MACHINE SHOP
- SHEET METAL SHOP
- OTHER _____

PRODUCTS INVOLVED _____

SAVINGS PER UNIT: $ _____
ORIGINAL IDEA FROM _____
BY _____

PROBLEM: _____

ACTION: _____

SOLUTION: _____

Two more examples of the kind of forms being used to report cost reductions. The purpose of reporting cost reductions isn't just to boost your department—it's a matter of supplying management with vital information that it ought to have.

In spite of occasional complexities such as these, the comparison price can be determined rather easily for items purchased repeatedly or for those standard products usually sold at established prices. When buying special products on a one-time basis the problem becomes more acute. It is understandable that in these instances many P.A.'s make no effort to determine savings.

A purchasing staff assistant for another company in this field provides one answer: "I believe that buyers should be required to establish the prices that go into their companies' quotations. These same prices should then be used as targets for buyer price performance."

Purchasing people in the aircraft and electronics industries in particular have actively sought a satisfactory measuring stick in order to come up with reliable profit figures. In addition to the target prices mentioned above they report using:

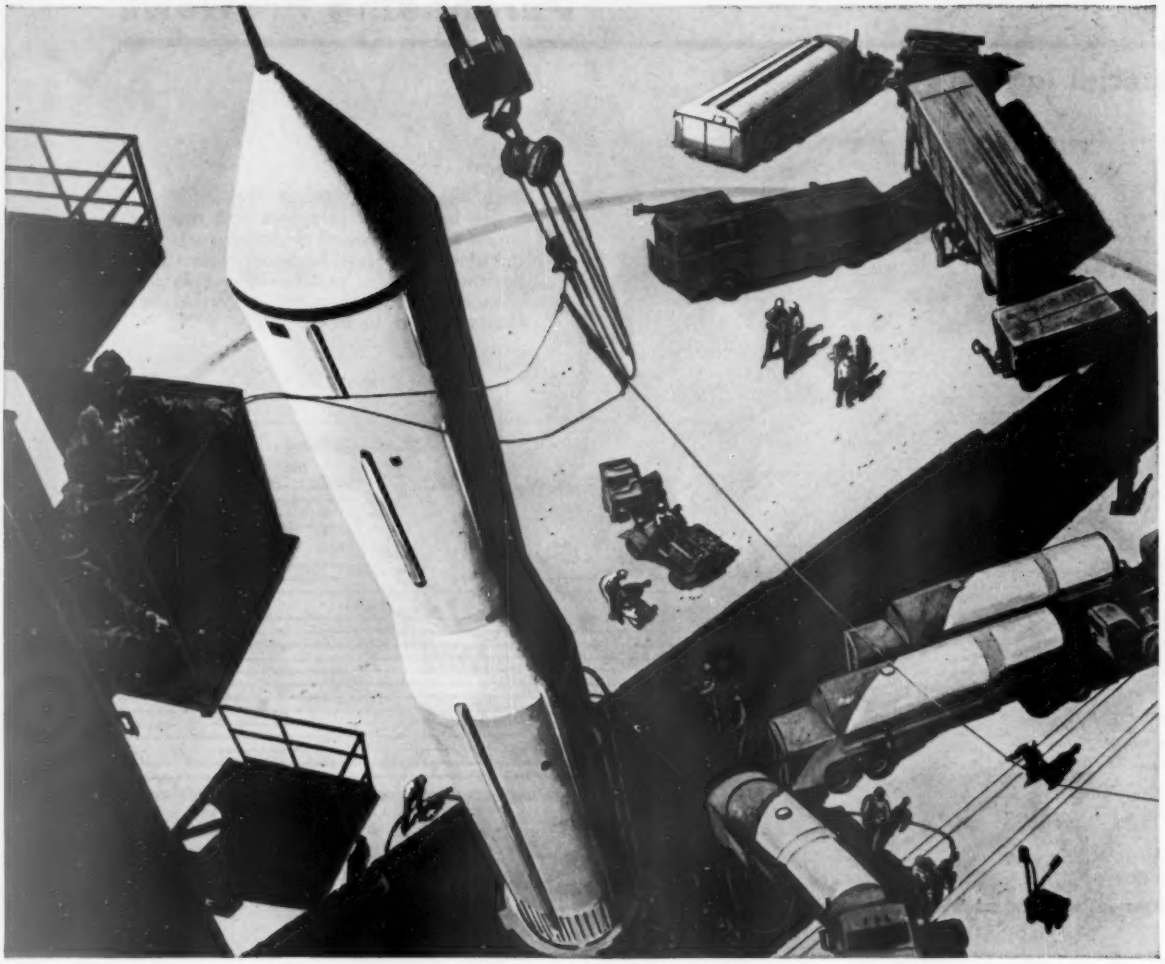
* estimated prices
* prices used in bid proposals
* average of quotations
* prices before negotiating
* own shop cost

One purchasing agent writes: "One of the best ways to save money on these complicated, one-time, specialty components is to negotiate with the vendor who has made the best quotation. This is not necessarily the one with the lowest price, since we have to watch quality performance and engineering ability. Neither does it mean that we chisel the man down. We reduce the quoted price by a sort of mutual assistance arrangement. We look at the vendor's cost breakdown and point out possible reductions. He considers our design and material specifications and recommends simplification and standardization where possible."

Quality Problems

Commenting on the quality problem another purchasing agent notes that "you don't know if you have saved any money until the material has been used." Purchasing people know that savings can be lost altogether by poor quality buying. When rejection rates and rework soar or deliveries are seriously late any savings made in the purchase price can be wiped out two and three times over.

Asked about the chance that stress on savings might produce over-zealous price buying, one vice president replied: "No trained and responsible buyer would jeopardize his reputation merely for the sake of price performance. Our people know that genuine savings go hand in hand with sound buying."



SEARING HEAT, FRIGID COLD TORTURE MISSILE BEARINGS

When a rocket fires, each component must *be* right, *work* right, the *first* time—and operating conditions are extreme! For example, liquid oxygen sends bearing temperatures plunging to hundreds of degrees below zero . . . while engine heat roasts bearings at a near-thousand degrees. Elsewhere, incredibly precise systems move surely on bearings with millionths-of-an-inch tolerances. In these critical applications you'll find Bower Roller Bearings!

On the ground, Bower Roller Bearings keep trucks, equipment and gantries rolling under the heavy loads essential to the missile's launching.

Bower, a major supplier of bearings for missiles and aircraft, also serves many other industries—automotive, construction machinery, machine tool and farm equipment, to name a few. You'll find bearings for most every field in Bower's full line of tapered, cylindrical and journal roller bearings.

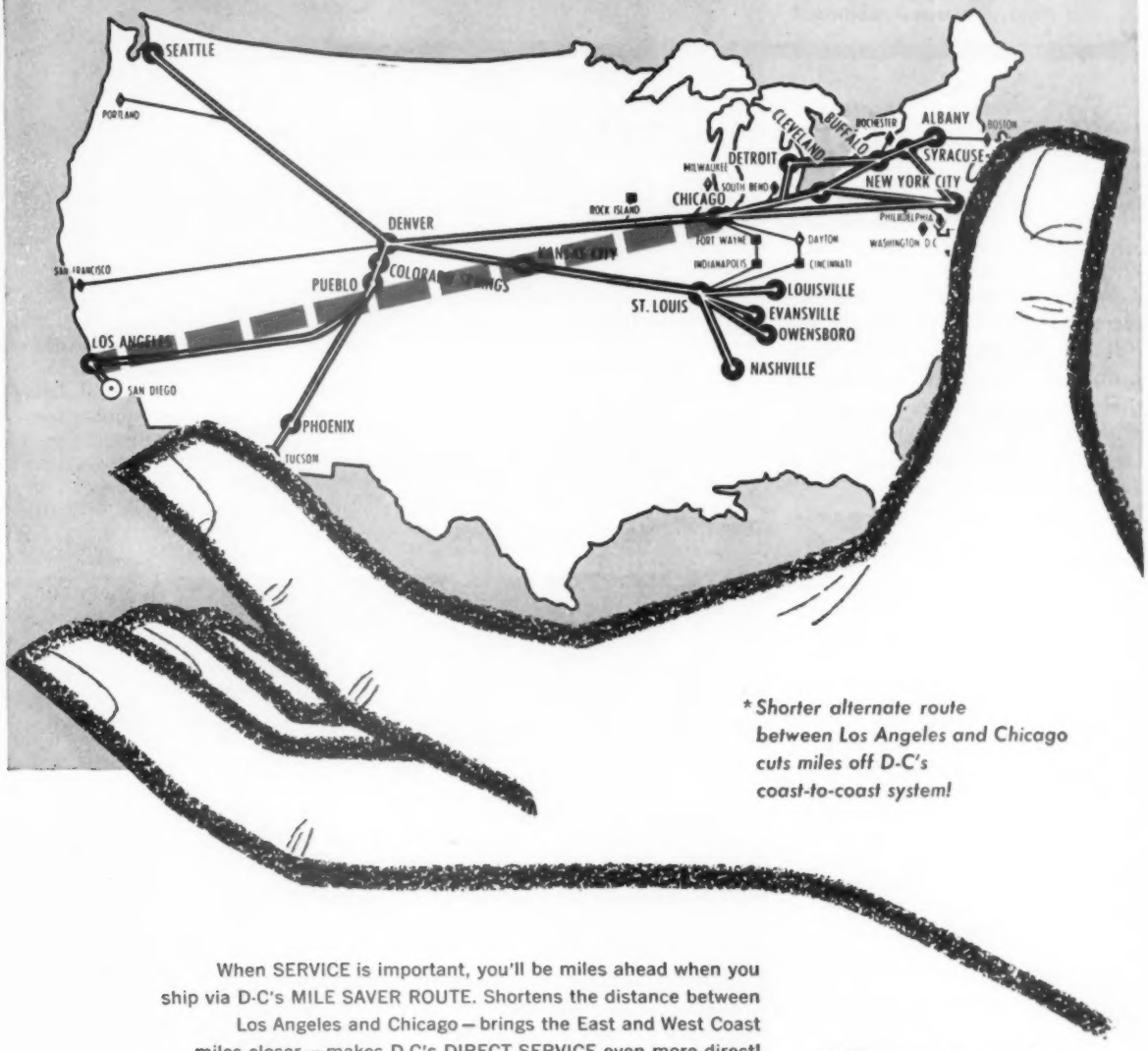
BOWER ROLLER BEARINGS

Bower Roller Bearing Division • Federal-Mogul-Bower Bearings, Inc. • Detroit 14, Michigan

For More Information Write No. 163 on Inquiry Card—Page 32

Shorten the distance coast-to-coast with...

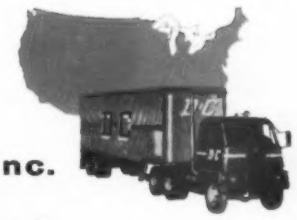
D-C's MILE SAVER* ROUTE



** Shorter alternate route between Los Angeles and Chicago cuts miles off D-C's coast-to-coast system!*

When SERVICE is important, you'll be miles ahead when you ship via D-C's MILE SAVER ROUTE. Shortens the distance between Los Angeles and Chicago — brings the East and West Coast miles closer — makes D-C's DIRECT SERVICE even more direct!

Try D-C's MILE SAVER ROUTE on your next shipment — you'll discover why D-C is the coast-to-coast choice for coast-to-coast service!



DENVER CHICAGO TRUCKING CO., Inc.

THE ONLY DIRECT COAST-TO-COAST CARRIER!

For More Information Write No. 164 on Inquiry Card—Page 32

DOW | **Industry's Chemicals:**

WHAT'S MAKING NEWS?

In nearly every field you'll find a manufacturer who unaccountably seems to stay ahead of the pack. Size doesn't account for it; often the larger companies wonder what magic their smaller competitor has that they might borrow. More often than not, the secret lies in a day-to-day alertness to new developments that pertain to his products and processes. One of the areas he keeps an especially sharp eye on today is the chemical field. Chances are he considers these advertisements, reporting on interesting chemicals and their profitable applications, "required reading."

You may wish to check certain items in this advertisement and forward to those concerned in your company:

ROUTE TO:

_____

_____

_____

_____

Chemical policemen arrest product impurities

When troublemaking metallic elements threaten to disturb the stability of a product, an energetic group of chemicals known as chelating agents goes into action. With their chemical "claws" they seize the culprits and isolate them from harmful activities.

This type of chemical police action is finding wide application in manufacturing today. Three of the best known chelating agents, Versene®, Versenol® and Versenex*, tackle varied assignments that require the disciplining of metallic ions—keeping soap clear, cosmetics pure and pharmaceuticals fresh from plantsite to bedside.

Who wants dirty soap? No one, obviously. But clouding in liquid soaps and shampoos caused by metal ions can certainly give them a "dirty" appearance. Versene 100 renders these ions inactive, keeping the soaps pure and good-looking. The cleaning power of soaps in hard water can also be enhanced by restraining hard water minerals in the formulations with Versene.

Almost any product containing lanolin can be improved by a dash of Versene. It thwarts rancidity, discoloration and precipitation in many different cosmetic preparations. Pharmaceuticals are kept free of oxidation and discoloration by this versatile chemical.

Streaks and stains, the nightmare of the textile industry, are often caused by iron ions in the fabric. Special Dow chelating policemen neutralize these ferric troublemakers, leaving a clear track ahead for cloth makers.

Stretches rubber makers' dollar. An excellent example of how Dow technical service specialists work with different industries on chelate applications is their work in rubber. For several years Versene products have been used to increase the speed and uniformity of the polymerization reaction. Recent investigations by Dow technical personnel indicate that Versene 100, rather than the more expensive chelating agents previously used, may be employed in conventional polymerization systems. The result? Substantial savings in polymerization costs.

Other applications for Dow chelating agents range from agriculture to metal cleaning, from leather to paint. Dow is continually working in developmental areas to provide a wider range of specialized chelating agents for many different applications.

*TRADEMARK OF THE DOW CHEMICAL COMPANY

Many hard water problems are alleviated with soaps containing Versene chelating agents.

CLINIC FOR CAR CHEMISTRY

With the new models just making their debut, automotive engineers are hard at work on next year's models . . . and on the '62's, too. And chemistry is playing a larger and more important role in their activities. Tomorrow's cars will depend more and more upon specialized fluids such as those now under development in Dow's two Automotive Chemicals Development Laboratories.

Cool by boiling? Work now in progress at Dow concerns synthetic lubricants for the engine and transmission, new antifreezes for use with aluminum engines and more efficient brake fluids. One project, still in the experimental stage, is ebullient cooling. It involves cooling an engine by boiling a liquid. In all this work, Dow is attempting to anticipate the chemical requirements of future automotive designs, and be ready with the right fluid for the job.

Creative chemical research at Dow is playing an increasingly important role in automotive design and engineering.

GOOD MIXER AT PRODUCT GET-TOGETHERS

Many formulators who had difficulty getting one material to join with another in their products have found Dowanol® solvents the perfect matchmaker. These versatile Dow solvents have so many useful properties that their applications in industry are almost unlimited. That's because they're compatible with a host of materials, including water and organic substances.

For example, a Dowanol® solvent can be used to couple water with a chlorinated solvent (insoluble in water) to produce a cleaning fluid that removes both water-soluble and petroleum-soluble stains. Dowanol products do yeoman service in paints, lacquers, varnishes, dyes, inks, cosmetics, brake fluids and many other products. Extensive facilities are maintained by Dow to help both industrial and specialty formulators develop new products.

★ ★ ★ ★

WE'D LIKE TO HEAR FROM YOU. Could we be of service on any of the Dow Chemicals discussed in this advertisement? For more information, write to THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Merchandising Department 610EE10-26.

The important figure in buying **coal** is the cost per **1000 pounds of steam.** Right?

Good reason to specify Island Creek coal
It's **Precisioneered***

Sizes below ¼" receive special attention. Here, centrifugal driers remove moisture accumulated during the wet cleaning process.

* **PRECISIONEERING.** Just where do you look for it at Island Creek? You'll see it at the mine face—in the superior seams of eastern coal. You'll see it throughout the great preparation plants where the most precise procedures and laboratory controls enable Island Creek to manufacture coal to the most exacting specifications. You'll see it in the far-reaching reports of Island Creek engineers . . . in their searching evaluation studies. You'll see it also in the things you can't actually see . . . but can only sense . . . the obvious dedication of a career company to its career, coal. It all adds up to—"Precisioneering" . . . and, more importantly, to coal that produces steam at the lowest net cost per 1000 lbs.—in your burning equipment. Our engineers would like to lay some interesting case histories before you and your plant people. Write. Or phone. No obligation, of course.

ISLAND CREEK
Precisioneered Coal

You can depend on Island Creek . . . a career company . . . dedicated to coal

Island Creek Coal Sales Company, Chafin Building, Huntington 18, West Virginia • Chicago • Cincinnati • Cleveland • Detroit • Greensboro • New York • Pittsburgh

For More Information Write No. 166 on Inquiry Card—Page 32

Materials Management in Russia: A Controlled Economy

THE industrial supply system in Soviet Russia superficially resembles our own. A firm "buys" the input materials it requires, in most cases directly from the producer. Payment is made by transfers in bank accounts. Terms of sale are stipulated in commercial contracts, and both buyer and seller are protected by the courts against violation of the contracts.

These similarities were reported to the Joint Economic Committee of Congress by Herbert S. Levine, of the Russian Research Center of Harvard University and the University of Pennsylvania. At the same time, he pointed out that the Soviet supply system operates in an entirely different climate than that normally prevailing in the U.S.

The Russian government, since the Revolution, has been operating in a chronic seller's market. Consuming industry has often been unable to get the quality and quantity of materials it needs at the required time in the cheapest way. To counteract these deficiencies, manufacturing enterprises in Russia have resorted to padding orders, excess inventories, staffs of "expediters" and vertical integration.

The Soviet system differs from ours in a more basic way, however. This is centralized planning and control over materials. Russian enterprises do not buy their major input of materials on an open market based on ability to pay the asking price.

Major materials in the Soviet Union are allocated by a central government authority. In order to make a purchase a Soviet firm not only has to have the money, but also needs an authorization from the government to buy.

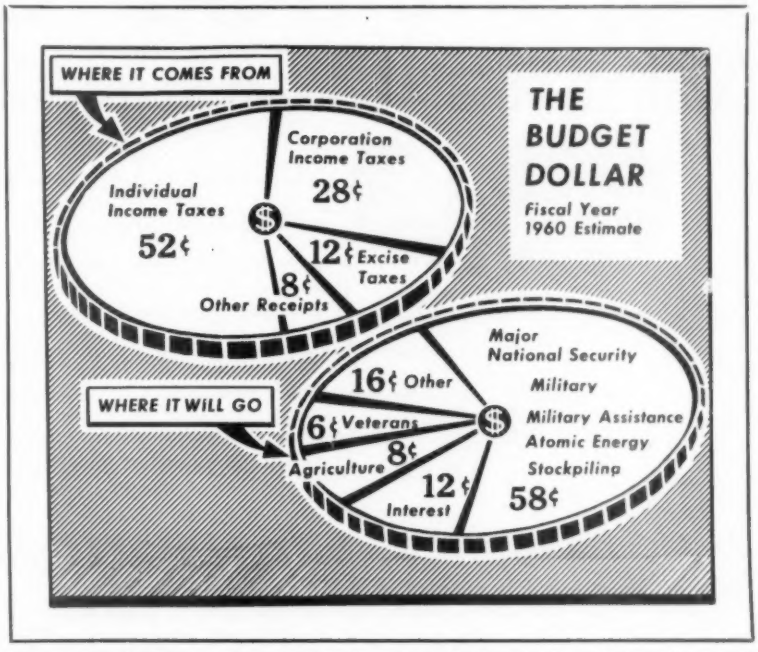
Materials are allocated to industry on a year-to-year basis, with the consumption and distribution pattern of the previous year used as a planning guide. Output targets for a dozen or so of the most important materials and major capital investment programs are established at the highest level of planning, the ministerial level of government.

At just about the same time that these decisions on major materials are being made, the industries consuming materials are preparing bills of materials—based on their previous consumption patterns and corrected for possible increases in output. These industrial enterprises, according to Levine, tend to pad their requirements. The reason: they know that they will be trimmed at several levels of government where final production quotas are assigned and materials are allocated.

The various bills of materials from plants all over the country are consolidated at the various Russian ministries where an all-union output and supply plan is developed. Each plant is then assigned its quota of materials and draws on it from the sources of supply available.

Thus the central government sets the production objectives of all Soviet industry and distributes the available materials to meet these objectives. In practice, the system is neither simple nor efficient. There are many impediments—including a vast bureaucracy and the pressures of politics.

(Turn Page)



Government planners have worked up this budget dollar picture for fiscal 1960. The big question is, however, will the budget be balanced?

You name it . . .

ROLL or CYLINDRICAL GRINDING

with Coated Abrasive belts reduces "set-up" time

The use of coated abrasive belts for roll or cylindrical grinding is spreading rapidly. New machines are being introduced and many conversions are being installed.

The reason for the popularity of this easy-to-work system is that it gives better finishes and requires less set-up and adjusting time.

Ask your BEHR-MANNING representative how coated abrasive roll or cylindrical grinding can save you time and money — or write direct to Dept. PU-10.

BEHR-MANNING CO.
TROY, NEW YORK
A DIVISION OF NORTON COMPANY

NORTON ABRASIVES®

BEHR-MANNING PRODUCTS: Coated Abrasives • Sharpening Stones • Pressure-Sensitive Tapes
NORTON PRODUCTS: Abrasives • Grinding Wheels • Grinding Machines • Refractories • Electrochemicals
In Canada: Behr-Manning (Canada) Ltd., Brantford. For Export: Norton Behr-Manning Overseas Inc., Troy, N. Y., U.S.A.

For More Information Write No. 167 on Inquiry Card—Page 32

Washington Report

The Soviet supply system has many similarities to the Controlled Materials Plan used in this country during World War II. This plan was modified for less stringent control purposes during the Korean War. "CMP" was operated on the concept that by strictly rationing the use of steel copper, and aluminum, the entire economy could be adequately controlled.

The Russians have added additional materials to the control scheme, but essentially it is a plan for rationing materials and establishing quotas for production of all goods and services. In this country, such control was needed only in wartime, but for the Communists scarcity has been their everyday lot since they came to power.

• Has Long Steel Strike Discouraged Expansion?

Department of Commerce officials say that the strikes in metals have slowed recovery for this fall, but the net effect will be to accelerate recovery during the winter months.

The reasoning is that the steel industry will have to operate at forced draft for the next six months to meet current industrial needs and rebuild normal inventory position. But there is some speculation, however, that the long strike has discouraged industrial expansion planning—and that projects which would have been ready to go the first of the year have been either deferred or abandoned.

Longest Steel Strike

This steel strike was not only the longest on record, but also the most peculiar. Even the closest to it in terms of length—the 58-day strike in 1952—presented a critical problem to industry as it approached the end of the period of work stoppage.

In contrast, at the three-month mark this time, there was little clamor by industry for relief. All through the strike, both galvanized sheet and cold rolled sheet were in tight supply, but purchasing agents took the position that they would back the steel companies and refrain from public pressure to force a settlement. Structural shapes were also in tight supply, but no major projects were held up for lack of structurals.

Commerce Department inventory analysts claim that steel, copper, and copper-base products were built up to a stronger inventory position than was generally realized. Steel warehouses, they point out, accumulated a large tonnage in inventory.

In contrast to previous strike periods, there was little complaint of "gray market" pricing. Independent warehouse operations continued to supply their regular customers — and supplemented their stocks to some degree while the strike was underway both with imports and with limited shipments from mills that continued to operate.

The priorities office of the Business and Defense Services Administration reports that it was literally "shocked" by the lack of demand for assistance from defense industries.

Government priorities assistance officials expected that as the strike lengthened out, they would begin to receive increasing requests from military contractors for help. But these were few and far apart.

Questioned about how they explained this lack of outcry on the part of industry for an end to the strike, here's what they said:

(1) inventories had been built up in anticipation of a long strike

(2) that industry generally backed steel managements in their resolve to hold the line on wages.

Most government observers believe that steel consumers feel prices will not be increased because of their support during the crisis.

• Interest Rates To Be High Through 1960

Pressure on credit may ease at the end of the year, but Federal Reserve Board analysts feel that interest rates will continue at the

Free Booklet by Scott's Washroom Advisory Service shows how to provide cheerful, efficient washrooms that cost less to maintain

Ladies' lounge at Mutual Trust, as designed by Perkins & Will, reflects suggestions from Scott's Washroom Advisory Service—mirrors located away from washbowls prevent hair-clogged drains; lipstick dabs (note holder mounted on mirror) save paper towel expense.

Mr. Maurice G. Wahlstrom, Building Superintendent of Mutual Trust Life Insurance Company's new home office in Chicago, says: "Our washroom facilities reflect management's consideration for employees and help to make daily working life enjoyable instead of a drudgery."

PERKINS & WILL, ARCHITECTS

Washroom bottlenecks are eliminated due to efficient placement of washbowls, recessed soap dispensers, towel cabinets and other fixtures. Personnel are routed from sink to towel cabinet and into next room where mirrors are located.

The information in this free 32-page booklet is based on Scott's experience in helping to plan nearly a million washrooms and lounges for business and industry. It will tell you certain basic principles in washroom design that make employees' working environment pleasant, while reducing upkeep. Send for the booklet today. No charge or obligation, of course.

SCOTT PAPER WASHROOM ADVISORY SERVICE®

Scott Paper Company
Department P-910
Chester, Pennsylvania

☐ Send me the free booklet on Scott's Washroom Advisory Service.

☐ I'd like to see Scott's 14-minute film on how to improve present washrooms.

Name_____

Title_____

Company_____

Address_____

City_____ Zone_____ State_____

current high level.

The 5% interest rate on prime commercial loans is considered more normal than the lower range of rates that prevailed in the 1930's. Reason for the current high rate of interest is the large demand for credit from many sources.

In addition to heavy borrowing by the Federal Government, state and municipal governments have also been large borrowers. And the public has been piling up debt through installment buying.

Further, about 1,380,000 houses will have been started this year—the second largest number of starts in the nation's history and up from 1,209,400 starts last year.

Beginning with the new year, the government will cease to be a net borrower. Housing analysts of the Federal Housing Administration forecast that the rate of new housing starts will drop off next year—perhaps as much as 9%. Therefore, to some extent the pressure on money will lessen.

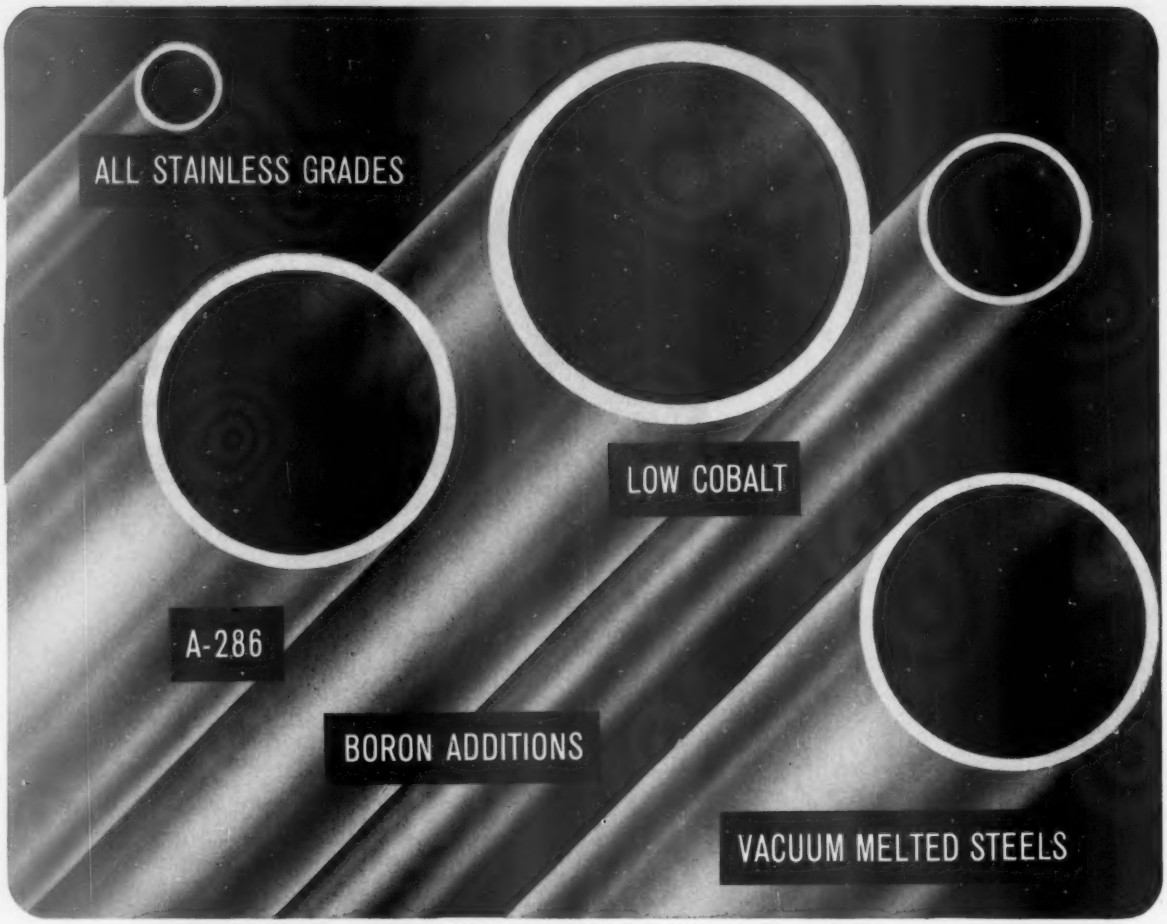
Demand for money from industrial borrowers is likely to increase, however, with an increase in plant and equipment investment expected. Federal Reserve Board economists believe that the easing of pressures on credit will be offset by increased demand from other sources. What they look for is a standoff—with interest rates remaining high.

• Municipal Purchasing Still On The Rise

Municipal purchasing continues to increase in volume, as shown by a Bureau of Census report on city government finances. The report shows that the 17,000 "active" municipalities spent a total of $13-3/4 billion last year. This figure was 7% greater than the spending figure for 1957.

A quick look at trends in municipal purchasing shows total revenues to the cities increasing, total spending increasing, and total debt going up. This, of course, means that while revenues are on the increase, the expenditures are going up at an even faster rate.—**A. N. Wecksler**

Experience *— the added alloy in* ***Allegheny Stainless***



What are your needs in Seamless Tubing?

A-L offers widest range of materials and large diameters with walls as thin as .032".

Here is the widest range in materials in stainless seamless tubing available anywhere to meet your exact requirements and solve high-temperature or corrosion problems and save you money.

Allegheny Ludlum makes seamless tubing in all stainless grades including 309, 317, 318, 310, 416 and 446—normally difficult to obtain. Also available in high-strength alloys such as A-286, in vacuum melted steels, and in custom analyses grades such as low cobalt with .01 or .05 max. and small boron additions to standard types.

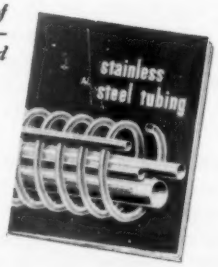
A-L also makes composite tubes with bonded combinations of carbon and stainless and other metals for special chlorine-corrosion applications in process equipment.

Allegheny Ludlum Stainless Tubing ranges from 3/16" OD to 3½" OD with wall thickness ranging from .013" to .375"—typical of the sizes that A-L can produce. For certain applications, .500" walls are possible. Some standard sizes in stock are 2½" OD—.032" walls, 3" OD—.042" walls and 3½" OD—.042" walls and 3½" OD—.058" walls. All sizes with true circularity, no dents or handling marks.

A-L Tubing is also available in small quantity orders, in random or cut lengths. Standard grades and sizes in stock throughout the country. Call your nearest A-L representative for all the help you need.

Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa. Address Dept. P-22.

NEW! FREE—Write for your copy of Allegheny Ludlum Stainless Tubing—32-pages of technical data, grades and suggested applications.



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AL

ALLEGHENY LUDLUM

for warehouse delivery of Allegheny Stainless, call RYERSON

Export distribution: AIRCO INTERNATIONAL

EVERY FORM OF STAINLESS . . . EVERY HELP IN USING IT

For More Information Write No. 171 on Inquiry Card—Page 32

Purchasing Follow-up

Steel Shortage May Force Many November Plant Shutdowns

THE latest report of the National Association of Purchasing Agents' steel committee says "with only one exception, all (members) are able to accomplish full operations through October."

But by the end of this month, the committee reports, steel inventories in metalworking plants "will be so completely unbalanced that extensive shutdowns may be necessary."

The report notes that "some had to bolster steel stocks with warehouse and foreign buys." But it adds "no one reported heavy purchases of premium priced steel."

Committee Chairman A.G. Ruediger, director of purchases at Carrier Corporation, says "many substitutions are being made in order to meet schedules." Aluminum is cited as one of the substitute materials that got a wide play from purchasing agents during the steel strike.

Steel Expert Ruediger: "Shutdowns are forecast for November."

Buying Foreign Steel

Regarding foreign steel, the report states that "some companies have placed orders for foreign steel, mostly structural and plate, as a hedge for December, January, and February delivery." The reason: P. A.'s fear that domestic mills will not be able to meet delivery requirements. In addition, orders have been placed with Canadian steel mills for fairly large tonages of cold rolled strip and sheet for delivery during this same period.

Here's the schedule steel buyers believe U.S. mills will follow:

- Orders placed for delivery last June and July: Ready within 10 days.
- August orders: 4 to 6 weeks.
- September orders: 8 to 10 weeks.

Sheet steel is expected to be the tightest item, especially the zinc coated variety. Sheets will probably not get back to normal lead time ordering before July 1960, the report says.

Carbon wire appears to be still in a buyer's market. And alloy and stainless products are expected to be available in normal lead time within two to three months.

It is expected that mills will go back to a complete allocation system. And it will probably take many months before they catch up with demand that has been building up by purchasing agents.

'59 Sales Hike Seen For Glass, Metal Containers

Shipments of both glass and metal containers are expected to rise this year, says Standard & Poor's.

Value of glass container shipments will probably increase about 6% from 1958 to $875 million, it says. This represents 150 million gross containers. However, the effects of the strike by the mold makers could have an adverse effect on the 1959 sales picture, according to S&P.

Despite rising costs, improved efficiency and larger volume may mean that profit margins of the leading glass container companies will hold steady over the coming months. An example of the glass industry's greater efficiency: substantial reductions have been made in the thickness of glass required in certain types of containers—without any loss of strength.

5% Gain

Metal container deliveries should rise more than 5% above the previous year and surpass the previous peak established in 1956, notes Standard & Poor's. This would mean a total of 43.5 billion units produced from close to 5 million tons of steel.

In the first half of 1959, gains in non-food container shipments exceeded the advances registered for food products. The largest percentage gain came in soft drink containers, with a 28% rise over the similar period last year.

'57-'58 Recession Hit Long-Time Employees

Workers who had steady jobs for at least five years were among those hardest hit by the 1957-58 recession, a survey of New York state workers shows. More than 50% of the long-term unemployed who received extended benefits had not collected any benefits since 1953. And 80% of those who collected extended benefits had not exhausted their regular benefits since 1953.

These facts about employment were released by the New York State Department of Labor. The basis was a sample study on "exactly who received these benefits, in what industries they had been employed, and how long they had been out of work."

The recession was felt most severely by workers in metal and machinery manufacture, the report shows. More than half of all claimants under the 1958 Federal Temporary Unemployment Compensation Act were manufacturing workers. Unskilled and semi-skilled workers predominated, with unemployment figures at 26% and 23%, respectively.

The median age of TUC claimants was 44.8 years. "This appears to confirm studies which show that while older workers gener-

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DETREX factory and field men, who specialize in metal cleaning processes, have a combined background of many thousands of man-years – devoted exclusively to every possible type of degreasing operation.

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DETREX CHEMICAL INDUSTRIES, INC.

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World's Largest Exclusive Producer of Cleaning Chemicals and Equipment

Purchasing Follow-up

ally fare relatively well during recessions because of high seniority ratings, those who do lose their jobs meet with difficulty in getting rehired," the report says.

Business Failures Rise 6% in Latest D&B Report

Business failures turned up 6% to 1135 in the latest monthly report by Dun & Bradstreet, Inc.

Boosted by increased failures in construction and service industries, business casualties edged above the similar 1958 period for the first time this year. However, the toll remains slightly below the post-war peak for that month established in 1957.

Dollar liabilities involved rose for the second consecutive month to $54.5 million. Although manufacturing failures dipped to the lowest level thus far in 1959 and wholesaling failures decreased moderately, business mortality in construction, retail trade, and commercial services climbed.

Only the Middle Atlantic and East South Central States had fewer failing businesses than the previous month. New York casualties dropped to an 11-month low. Increases were sharpest in the East North Central and Mountain states.

Electric Autolite Broadens Product Line

What can suppliers do when major customers decide to make instead of buy?

The Electric Autolite Company did three things when car manufacturers began making many of the items it had been selling them: disposed of its excess plant capacity; started a strong cost-reduction program; began to diversify and alter its identity as a one-industry supplier.

Autolite has stepped up its research and development in ceramics, hydraulics, electronics, acoustics, and pneumatics and is aggressively going after business in those fields. In addition, it plans further diversification through acquisitions—like the recently announced purchase of C & D Batteries, Inc., Conshohocken, Pa.

A measure of the effectiveness of Autolite's moves is its earnings record for the first half of this year. President R. H. Davies reports the six-month net is four times more than a year ago, while sales were up 22% for the period.

New Orders Up For Industrial Supplies

The monthly report of the American Supply & Machinery Manufacturers' Association shows that new orders for industrial supplies and machinery were off 1.9% from the previous month.

Its seasonally adjusted new order index fell 4 points to 212 (July 1948=100). This index reflects new orders for production tools, equipment, and supplies placed by industrial distributors with their manufacturing sources.

A year ago, the ASMMA barometer was at 172, having gained 24 points from the recession low registered in April 1958. The index rose to 221 in March 1959—matching the record set in January 1957—but since then the pattern has been irregular, more or less paralleling the Federal Reserve Board's seasonally adjusted index for durable goods production.

Distributors Prepare Articles on Their Role

The Joint Research Committee of the National and Southern Industrial Distributors' Associations is preparing a series of articles about the role of industrial distributors. The articles will appear in local purchasing publications.

The first article was written by R. K. Allison, president of Industrial & Textile Supply Co. of Charlotte, N. C., and an active member of the joint Research Committee. It was called "How to Get the Most Out of Your Industrial Distributor."

Announcement of Major Significance

FOR EVERY USER OF SOCKET HEAD CAP SCREWS

Following exhaustive studies begun in 1954, the socket screw products industry adopted, on April 24, 1959, new dimensional standards for socket head cap screws. Standard Screw Company participated in these studies and concurred in the recommendations approved by leading fastener manufacturers.

Adoption of the new standards, to be known as the "1960 Series", has important implications for every user of socket screws. As a public service Stanscrew will point out these implications . . . not only in relation to its own products, but also to the overall program of the industry.

Differences, Advantages Of New Design

The "1960 Series" has been carefully engineered so there is functional uniformity for all sizes, particularly as it applies to wrenching areas and to the relationship of head diameters to body diameters. For most sizes, as illustrated, this means substantial increases in both head diameter and socket size, and thus provides these advantages over the present design:

1. *Maximum utilization of the fastener's inherent strength . . . larger wrenching area permits application of greater clamping force.*
2. *Increased bearing surface under the head . . . up to 233% more.*
3. *Minimum indentation . . . particularly important with softer metals.*

Should You Convert Now?

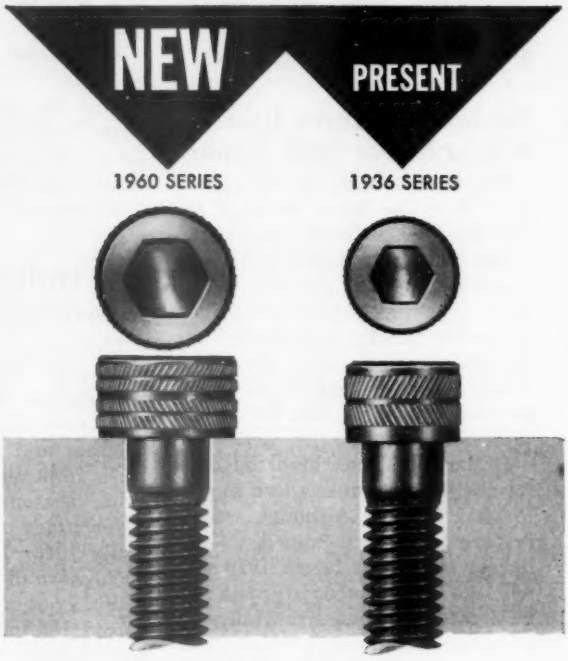
Obviously, for many applications, the new design offers important benefits which indicate conversion as rapidly as possible. In some cases, however, existing product design may not accommodate the larger heads . . . or, where socket cap screws are countersunk, revising your countersinking operations may create significant production problems. Stanscrew urges, therefore, that each company learn complete facts on the fastener industry's future plans.

Timetable For Industry Changeover

Stanscrew has already started production of the new "1960 Series". Manufacture of the present (1936) series will continue, however, and they will be available as standard, in-stock items until at least January 1, 1961. At that time, it is now contemplated the "1960 Series" will become the accepted standard throughout industry and the "1936 Series" will then be furnished only when specifically ordered.

When Designing A New Model

For products now on the drawing board, this timetable indicates many manufacturers should plan to use the "1960 Series" as the standard for later production. By making such design provisions, you assure maximum acceptance and minimum difficulty in the future.



For Existing Products

For many existing applications, where socket cap screws are not countersunk, either the 1936 or the "1960 Series" may be used. In frequent cases, improvements of the 1960 design suggest conversion within a short period. In other applications, where the heads are countersunk or where the greater head diameters of the "1960 Series" create a problem, changeover should probably be postponed until a general redesign of your product is scheduled.

Special Stanscrew Marking

To further distinguish its "1960 Series", Stanscrew will knurl heads of all new style socket cap screws with a split herringbone design (as shown). This special marking and the new "1960 Series" box labeling will provide quick identification of these quality fasteners.

For Further Information

Your Stanscrew distributor has the latest facts on the new "1960 Series" and will be happy to discuss them with you. If desired, he also will arrange for a prompt visit from a Stanscrew fastener specialist who will be most happy to go over all aspects of this new industry program as it regards your own particular operation.

Stanscrew also has a new brochure which provides complete dimensional and design data on the "1960 Series". No obligation, of course, for your copy.

STANSCREW FASTENERS

CHICAGO | THE CHICAGO SCREW COMPANY, BELLWOOD, ILLINOIS
HMS | HARTFORD MACHINE SCREW COMPANY, HARTFORD, CONNECTICUT
WESTERN | THE WESTERN AUTOMATIC MACHINE SCREW COMPANY, ELYRIA, OHIO

STANDARD SCREW COMPANY 2701 Washington Boulevard, Bellwood, Illinois

For More Information Write No. 174 on Inquiry Card—Page 32

Value Analysis Course To Be Held in Boston

Purchasing agents, product designers, and manufacturing managers will be among those attending the first industry-wide training course in value engineering and analysis to be held in Boston November 30-December 2.

The course has been developed by the Industrial Education Institute, in cooperation with the Materials Management Institute.

Members of the "faculty" for the course are: L. D. Miles, manager of value services, General Electric Company; Rear Admiral (Ret.) A. G. Mumma, vice-president, engineering, Worthington Corp., Rear Admiral (Ret.) R. S. Mandelkorn, chairman, value engineering committee, Electronic Industries Association; Vincent deP. Goubeau, vice-president, materials, Radio Corporation of America; Frederick S. Sherwin, manager, value analysis service, Raytheon Company; Don Otis, controller, electric typewriter division, International Business Machines Corp.; Bernard W. Eades, manager, value engineering, Stromberg-Carlson Co.; Raymond J. Spenard, value analysis education, U.S. Army Ordnance; Morgan D. Roderick, office of value engineering, Bureau fo Ships, U.S. Navy; Paul V. Farrell, editor, PURCHASING Magazine; Louis J. DeRose, executive director, Materials Management Institute; Roy Fountain, manager-value research, General Electric Co.; and R. Glenn Woodward, value engineering consultant, Raytheon Corp.

Freight Car Deliveries Rise; New Orders Off

Deliveries of freight cars to railroads totaled 4890 in the latest monthly report of the Association of American Railroads and the American Railway Car Institute. In the previous month, 4273 cars were shipped.

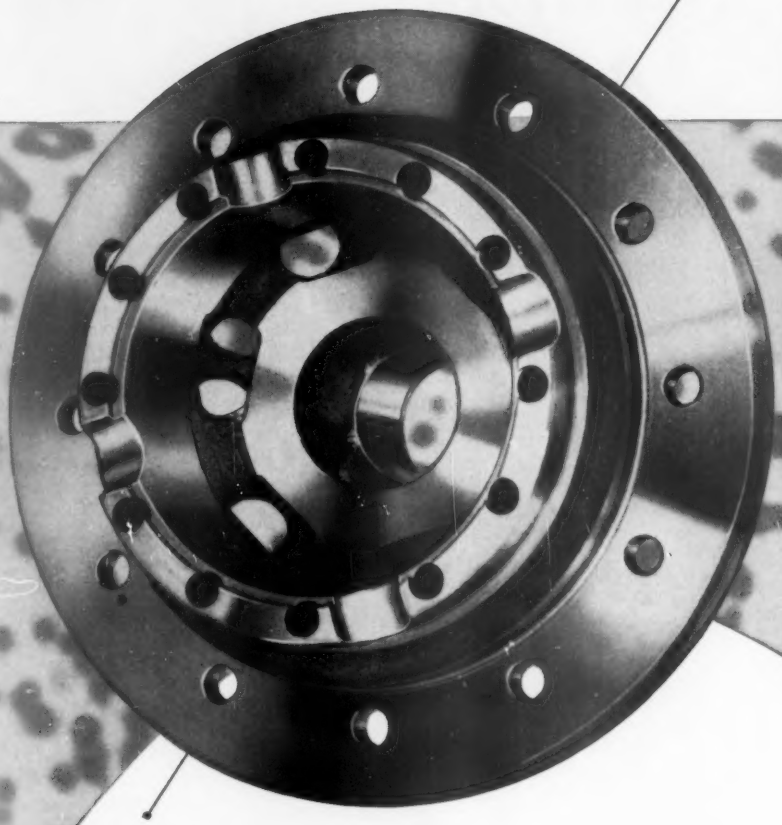
New orders for the freight cars, however, were off sharply. The latest figure was 1753 cars, compared to 4159 in the earlier month.

is your problem

machinability?

NATIONAL HTM CASTINGS

are the answer



Important Physical Properties	
Brinell	163 to 302*
Yield, psi	48,000 to 85,000*
Ultimate, psi	70,000 to 110,000*
Elongation, %	7 to 2*

**Depending upon grade*

There are many reasons for specifying HTM (Pearlitic Malleable) castings for your product. One is *machinability of 70-90 percent* (B1112 steel = 100).

But there are many other equally valid reasons. High ultimate strength . . . extreme wear resistance under heavy loads and high speeds . . . non-seizing qualities . . . air or liquid quenching . . . ability to be smooth-finished.

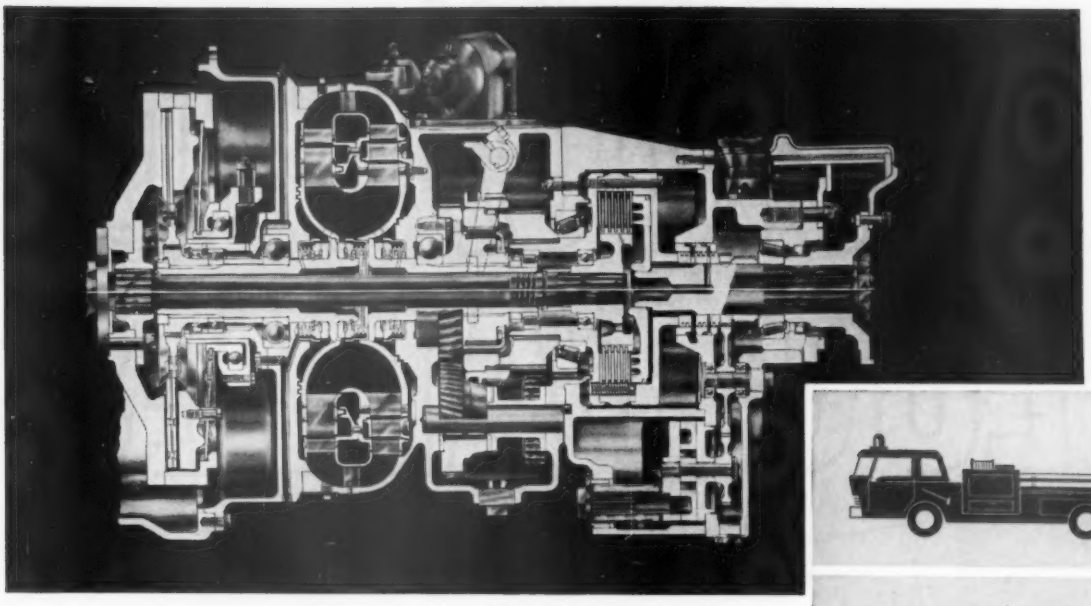
So when you're looking over the materials field, don't overlook the advantages of HTM castings. For HTM metal can be cast by either the shell mold, CO_2, or green sand methods. This means production costs tumble . . . performance and saleability of your product go up.

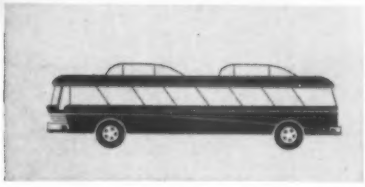
member MALLEABLE CASTINGS COUNCIL

NATIONAL MALLEABLE and STEEL CASTINGS COMPANY

Established 1868 — *Cleveland 6, Ohio*

The nation's largest independent producer of malleable and pearlitic malleable





Spicer 183 Turbo-Matic...

The Transmission That Thinks for Itself!

Just turn the ignition key and accelerate . . . the 183 Turbo-Matic does the rest. Acceleration is smooth and rapid from standstill to direct drive, regardless of load condition or driver skill. The mental and physical fatigue of professional driving is materially reduced. Drivers are fresher, more alert, all day.

In buses and emergency vehicles Turbo-Matic multiplies available engine torque by as much as 5.6 times to provide unexcelled power utilization for improved operating efficiency and minimum maintenance downtime.

Many American cities have discovered the operational advantages of the heavy-duty Spicer 183 Turbo-Matic transmission. Ask the Dana engineers to help you adapt it to your vehicles.

. . .

Write for your free copy of booklet No. 806, which describes the outstanding features of the Turbo-Matic transmission.

DANA Spicer

DANA CORPORATION

Toledo 1, Ohio

Serving Transportation — Transmissions • Auxiliaries • Universal Joints • Clutches • Propeller Shafts • Power Take-Offs • Torque Converters • Axles • Powr-Lok Differentials • Gear Boxes • Forgings • Stampings • Frames • Railway Drives

Many of these products are manufactured in Canada by Hayes Steel Products Limited, Merritton, Ontario

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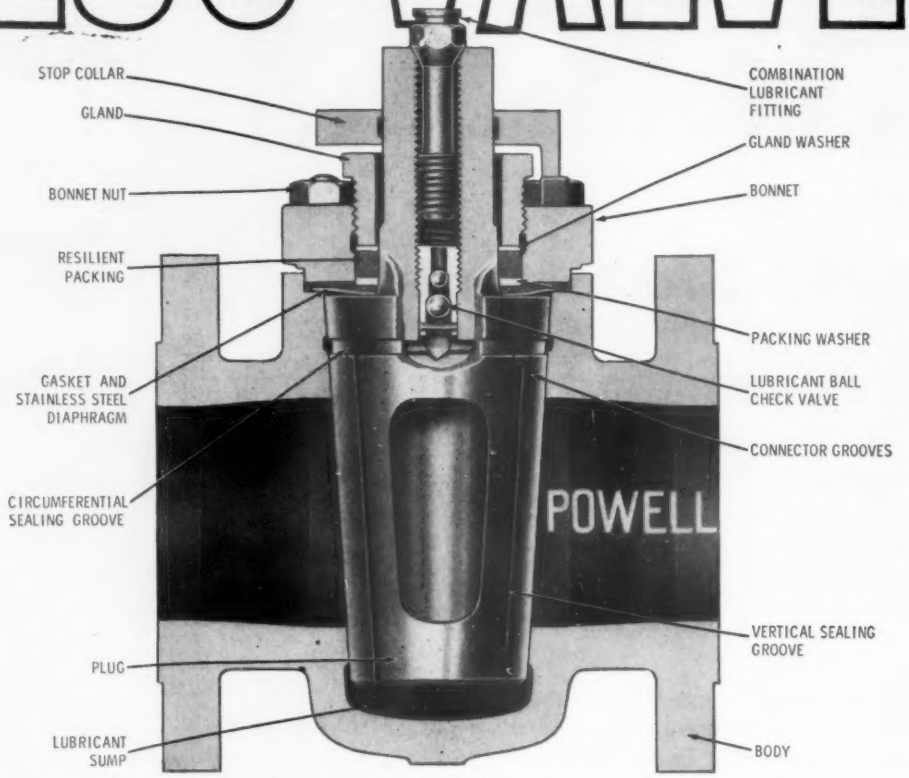
POWELL

LUBRICATED PLUG VALVES



Sectional view Powell Screwed Gland Lubricated Plug Valve.

Like all Powell Valves, Powell Lubricated Plug Valves are superior in their field . . . and have many advantages over other conventional types of Valves.

- Simple design: only three basic parts—Body, Bonnet, Plug.
- Quick, complete shut-off—a quarter turn will close or open the valve.
- Tapered Plug assures positive seating.
- Machined surfaces of plug and body are not exposed in the open position. Any media adhering to the plug when in the closed position is removed when plug is rotated.
- Cavity-free straight passage assures streamlined flow in either direction. Scale and sediment cannot collect.

Powell Lubricated Plug Valves are available in sizes ½" through 16", depending on the type required—Semi-steel 175 and 200 pounds WOG;—Carbon Steel ASA 150 and 300 pounds.

Powell can also furnish Lubricated Plug Valves in other alloys on special order.

For all your valve needs, make it a policy to consult your local Powell Distributor—or write directly to us.

THE WM. POWELL COMPANY

Dependable Valves Since 1846 • Cincinnati 22, Ohio

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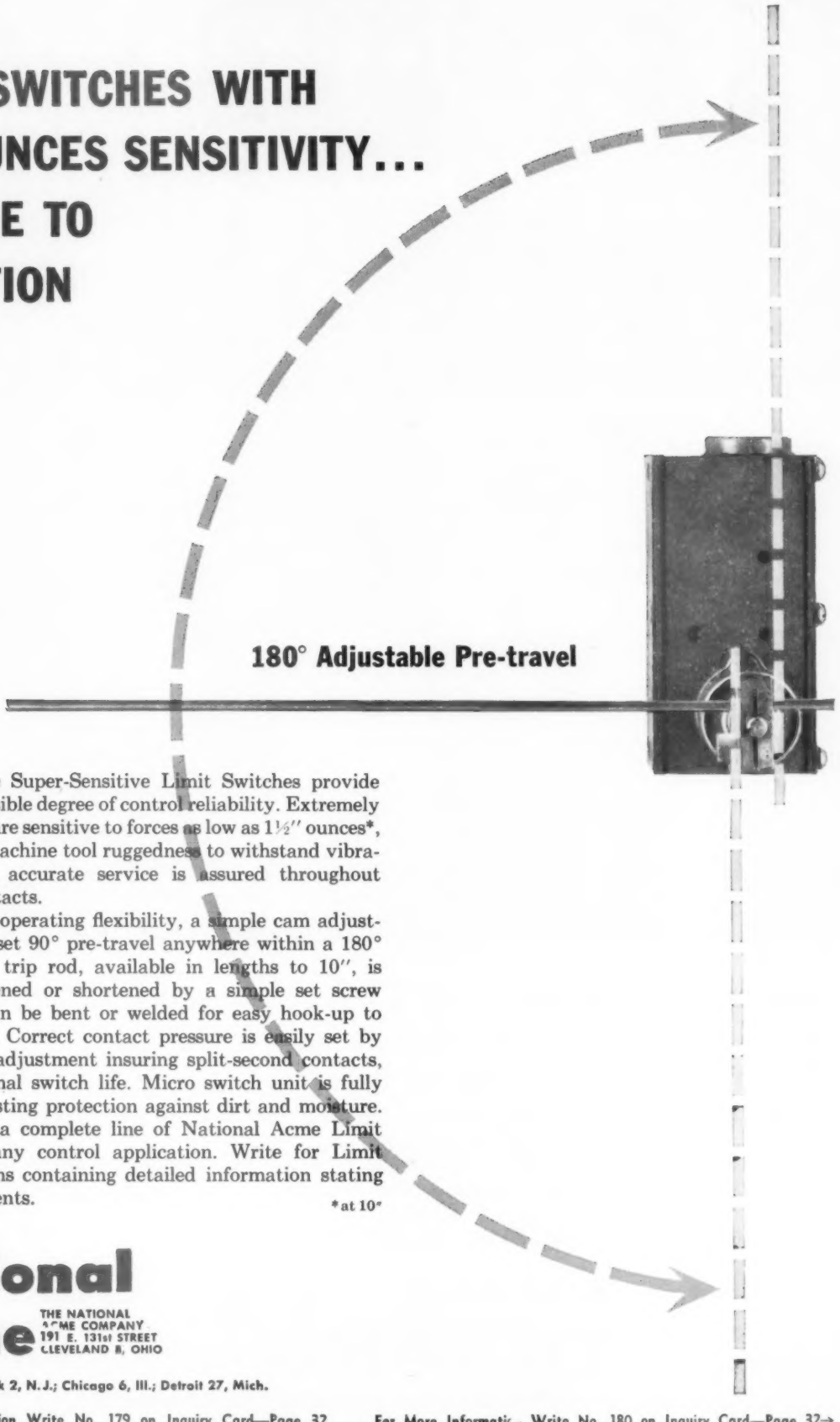
LIMIT SWITCHES WITH 1½" OUNCES SENSITIVITY... IMMUNE TO VIBRATION



National Acme Super-Sensitive Limit Switches provide the highest possible degree of control reliability. Extremely compact, they are sensitive to forces as low as 1½" ounces*, and yet have machine tool ruggedness to withstand vibration. Reliable, accurate service is assured throughout millions of contacts.

For extreme operating flexibility, a simple cam adjustment lets you set 90° pre-travel anywhere within a 180° arc. The steel trip rod, available in lengths to 10", is readily lengthened or shortened by a simple set screw adjustment; can be bent or welded for easy hook-up to other linkages. Correct contact pressure is easily set by a steel spring adjustment insuring split-second contacts, ten times normal switch life. Micro switch unit is fully enclosed for lasting protection against dirt and moisture.

Select from a complete line of National Acme Limit Switches for any control application. Write for Limit Switch Bulletins containing detailed information stating your requirements.

*at 10"

National Acme

THE NATIONAL ACME COMPANY
191 E. 131st STREET
CLEVELAND 8, OHIO

Sales Offices: Newark 2, N.J.; Chicago 6, Ill.; Detroit 27, Mich.

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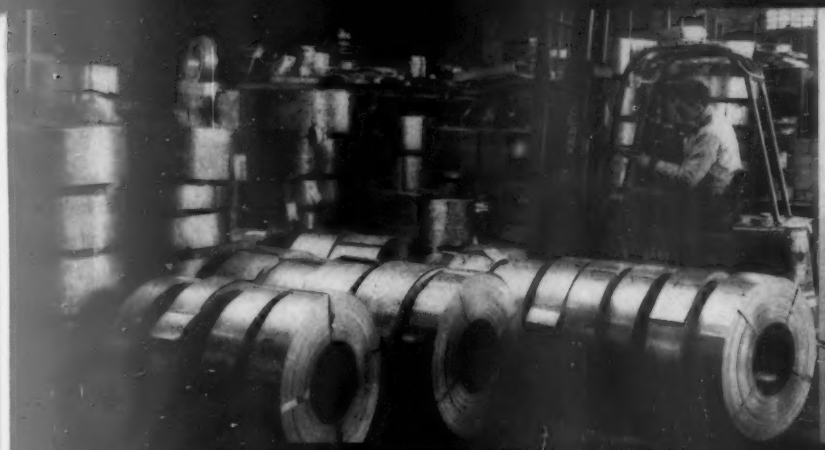
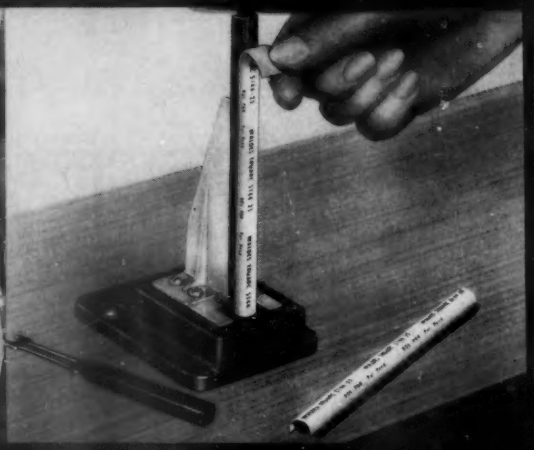
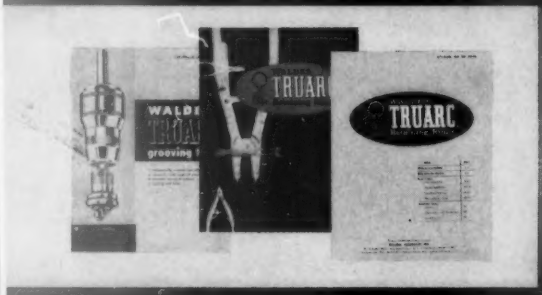


Plant capacity: Metal stock on hand at Waldes is sufficient for up to five months' full production. In addition to direct plant shipments, Truarc rings are available from a nationwide distributor network with 90 stocking points.



New product development: Rol-Pak, a new, faster method of dispensing rings simplifies handling, speeds assembly, provides type-size identification.



Complete technical literature available.

Widest line: 50 functionally different ring types, over 700 standard sizes, 6 metals, 13 finishes . . . a Truarc ring for every application.

Design aid: Chief Truarc Design Engineer Hugo Wurzel (right) discusses ring applications on Viewlex slide projector with Chief Engineer Henry J. Walter and Production Manager Bernard Kessler of Viewlex, Inc. Truarc Field Engineer Franklin B. Parker looks on at left.

PURCHASING VIEWPOINT: Price is only one consideration in a purchasing decision. A supplier's ability to deliver is another. At Waldes, to insure delivery of Truarc retaining rings during any emergency, we maintain as much as a five-months' supply of metal stock. By assuring you uninterrupted production, providing valuable technical assistance, developing new and better products... *Waldes helps you reduce the assembled cost of your product.* Catalog RR 10-58 describes all ring types, many applications. Send for it. 9.11

WALDES
TRUARC® RETAINING RINGS

WALDES KOHINOOR, INC., 47-16 Austel Place, Long Island City 1, N. Y.

TRUARC RETAINING RINGS . . . THE ENGINEERED FASTENING METHOD FOR REDUCING MATERIAL, MACHINING AND ASSEMBLY COSTS

3,500,000 pounds of plating

processed by this UDYLITE TEMPRON cylinder . . . and it's *still going strong*

This TEMPRON Cylinder has handled more than three and one half million pounds of work without replacement or repair. This impressive performance was recorded at the Detroit plant of Bellevue Plating, a division of National Machine Products Co. There, 24 of these cylinders continue daily to deliver high economy, low maintenance production for the fifth straight year. They are operated regularly under extreme and abrupt temperature changes stubbornly resisting heat, cold, abrasion and chemical action.

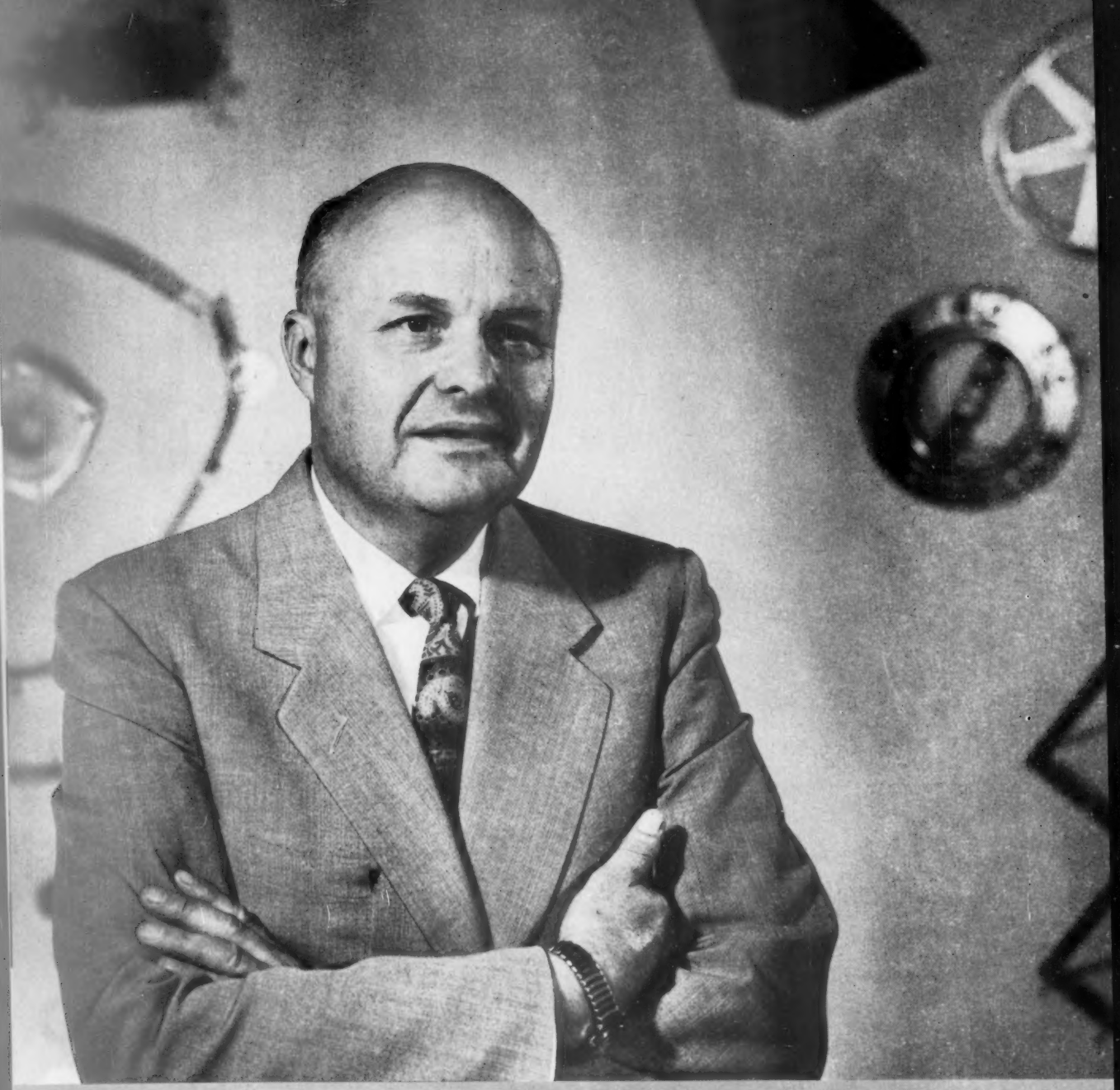
In the experience of users everywhere, these rugged TEMPRON Cylinders, an original Udylite design, prove to be a best-possible buy. You, too, can achieve full production with an absolute minimum of shut-downs for maintenance by installing durable Udylite TEMPRON Cylinders in your plant. If you're not already enjoying the benefits of these perennially economic producers you owe it to yourself to investigate their money-making potential. Ask your Udylite man about TEMPRON cylinders or write . . .

Al Betteley of Bellevue Plating says:

"We are thoroughly satisfied with Udylite TEMPRON Cylinders. The only reason that we haven't bought more of them for our present equipment is that we haven't worn out the original ones. You may be sure that we will specify Udylite TEMPRON cylinders on any new equipment of this type."

the udylite corporation

detroit 11, michigan • world's largest plating supplier



LOOK FOR THESE VALUES TO ADD PROFIT TO YOUR PURCHASES

APPLICATION ENGINEERING—General Electric application engineers are available to assist you with specific application problems, integrating services of other G-E engineering components. You get experienced, customer-oriented engineers to personally analyze problems, advise on electrical systems and components.

PRODUCT DEVELOPMENT—At General Electric, one of every 13 employees is a scientist or engineer. Product research and development is carried on in 98 laboratories. G.E. currently invests over three times as much, per sales dollar, in research and development as the average for all industry. This investment is your best assurance of continued improvement in product values.

NATIONWIDE SERVICE SHOPS—To assure you continued, uninterrupted performance of vital electric components, G.E maintains one of the nation's most complete and extensive systems of service facilities. More than 50 service shops are prepared to offer you three-way, 'round-the-clock assistance: repair and up-rating of old equipment, help in setting up a modern Productive Maintenance program, and emergency downtime service.

INSTALLATION AND SERVICE ENGINEERING—To facilitate on-time start-up and technical advice for you during installation, and to help train your operating personnel and check operation during initial stages, G.E. maintains an extensive Installation and Service Engineering organization. Assistance at installation means that you get smoother installation, earlier start-up and better understanding of equipment capability.

ANALYTICAL ENGINEERING—G-E analytical engineers, working with the latest tools of rapid analysis and computation, are available for studies on your special industrial

L. D. MILES—Manager of General Electric Value Analysis Service Discusses Productive Purchasing:

How to get total value for your purchasing dollar

"Value analysis examines all components of a finished product to determine their usefulness. It enables industry to reduce product costs without sacrificing value content. In short, it means the proper purchase price is the lowest price that will reliably supply *all* of the values needed."

Value Analysis and *Productive Purchasing* go together, and can make your purchasing decisions pay off two ways—

First, Value Analysis (VA) is a General Electric *Added Value*. Just about every product manufactured by General Electric has been value-analyzed to enhance final product usefulness and value content. This means savings for customers. Many of these savings are "invisible," since General Electric engineers have been taught to apply these VA concepts when working on G-E products in preliminary design stages. Yet, wherever possible, savings and innovations are passed on to product users. Result: when you specify General Electric for electrical components and systems, you get built-in *total value* in return for your purchasing dollars.

Now look at Value Analysis another way: for value buying or *productive purchasing*. Just as General Electric utilizes value analysis to produce high-quality apparatus, you can apply these same long-established value analysis techniques to purchase for profit. For example, when you get ready to make a buying decision—particularly for electrical apparatus—evaluate products offered by different suppliers to determine which vendor's product provides the greatest degree of added usefulness, compatible with price. While examining the full range of available product values, look for attractive *added values* like those discussed in the box below. Net result: you'll see for yourself that G-E added values—together with basic product value inherent in *all* General Electric apparatus—will offer you full value in use. This is Productive Purchasing.

How do you benefit? Productive Purchasing widens your buying spectrum, increases the soundness of your purchasing decisions. It also permits you to produce more effectively in competitive markets, and leads to sizable returns from your plant and equipment investments. General Electric Co., Section 666-1, Schenectady 5, N. Y.

GENERAL ELECTRIC

problems. Their efforts constantly result in valuable additions to industry's knowledge of electrical engineering technology.

PROJECT COORDINATION—General Electric's system of project coordination focuses the full capability of management and engineering on your order for product combinations or systems.

PROMPT DELIVERY—Minimizing time between contract and start-up is an important added value of General Electric service. Prompt delivery assures you of obtaining improved product benefits as soon as possible, permitting you to realize production and operating economies with a minimum of delay.

MARKET SUPPORT—General Electric is vitally interested in the welfare and growth of your business and industry and is active in supporting programs to help stimulate the nation's economy.

GENERAL ELECTRIC COMPANY
SECTION B666-1
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FREE BULLETIN

Please send me GED-3877 containing more information on Productive Purchasing.

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COMPANY_____

ADDRESS_____

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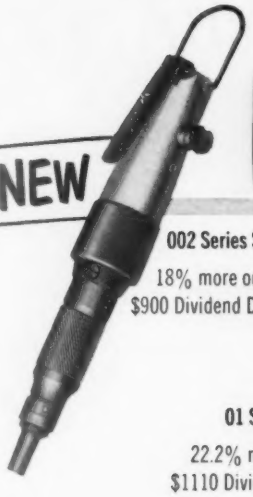
3 NEW SERIES IR SCREW DRIVERS

give you an ANNUAL DIVIDEND on your PAYROLL DOLLARS

NEW **DESIGNS SPEEDS POWER**



002 Series Screw Driver

18% more output . . . for $900 Dividend Dollars/year.

01 Series Screw Driver

22.2% more output . . . for $1110 Dividend Dollars/year.

NEW

NEW

0002 Series Screw Driver

75% more output . . . for $3750 Dividend Dollars/year.

If your operators are using older model screw drivers, you can increase their man-hour productivity by as much as $3750 Payroll Dollars in one year, just by replacing the older tools with one of the three new I-R designs.

Multiply these *Annual Dividends* by the number of screw driver operators in your plant, and you can see why management today is taking a new look at portable tool operations.

There's a fast, easy way to calculate the amount of *Dividend on Payroll Dollars* these new I-R screw drivers can help you earn in just one year—without adding to your present payroll.

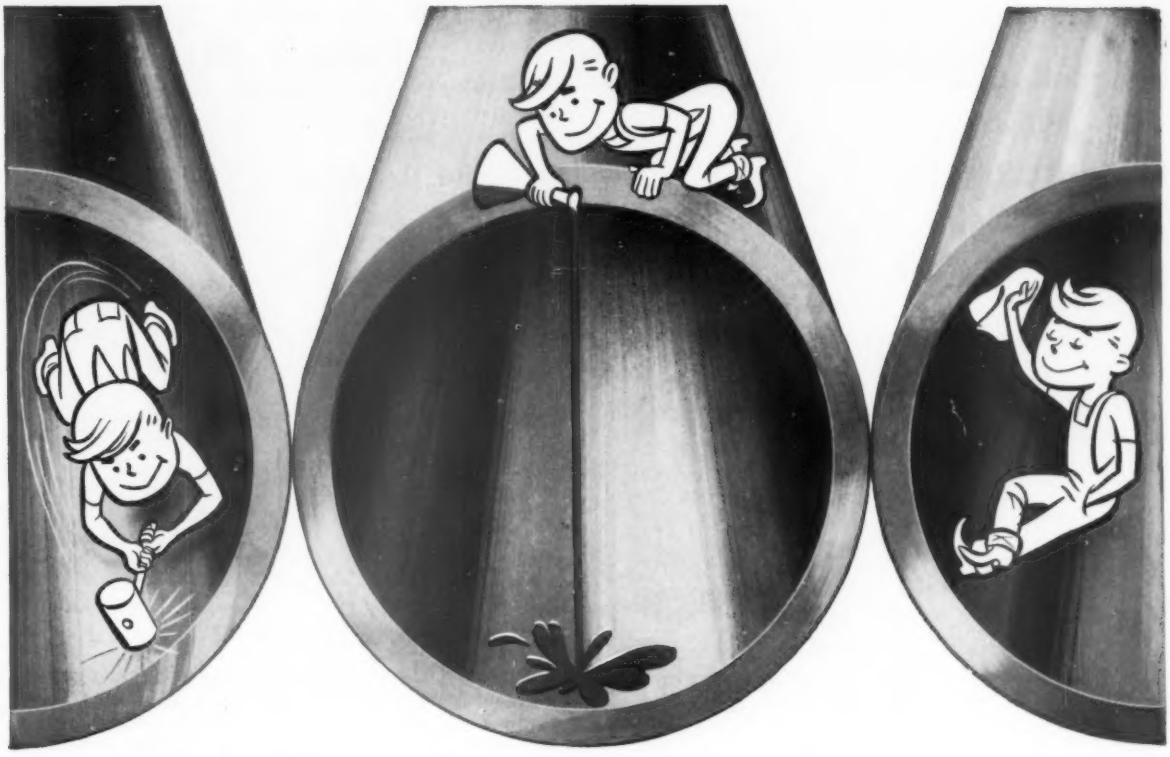
It's yours without obligation. To get it, call your I-R AIRengineer today. Or write Ingersoll-Rand, 11 Broadway, New York 4, N. Y.

Ingersoll-Rand

Tools plus AIRengineering increase output per man

8-925

For More Information Write No. 183 on Inquiry Card—Page 32



The smoother surface of CONTOUR-WELDED* STAINLESS TUBING *gives it greater resistance to corrosion*

Recent tests prove: (1) *Contour-welded* tubing is smoother than any other tubing, and (2) this extra smoothness provides greater resistance to corrosion.

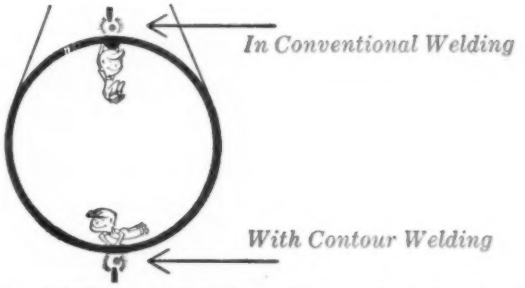
Here's how TRENTWELD® tubing, made by the exclusive *Contour-Weld* process, compares with other full-finished tubing:

- It's smoother than seamless because it's formed from uniformly rolled strip steel, whereas seamless is extruded or pierced.
- It's smoother than other welded tubing because the *Contour-Weld* process, patented by Trent, virtually eliminates the weld bead.

Other tests prove this smoother surface provides *increased resistance to corrosion* – because there are fewer focal points for corrosive attack. Not only that, the smoother surface ensures *longer fatigue life* and *less product incrustation.*

But get full details. Our free 48-page *"Trentweld* Manual" gives complete data on *Contour-Welded* tubing in sizes from ⅛" to 40" O.D., in stainless and high alloy steels, titanium, zirconium, zircalloy and Hastelloy.† Write: Trent Tube Company, Box 2518, Pittsburgh, Pa.

†Trademark Haynes Stellite Co.



In **CONVENTIONAL WELDING** of tubes, gravity pulls the molten metal down to form a bead that is difficult to remove by cold working. And cold working may lead to undercuts, focal points for fatigue cracks and corrosive attacks. Cleaning becomes difficult.

*With **CONTOUR-WELDING** the tube is welded at the bottom. Gravity still pulls the molten metal down inside the tube, but now the weld area corresponds to the contour of the tube. There's virtually no weld bulge on the inside surface. And even on the O.D., the weld seam more closely conforms to the contour of the tubing.

CONTOUR TRENTWELD

stainless and high alloy pipe and tubing

TRENT TUBE COMPANY

Subsidiary of Crucible Steel Company of America • GENERAL OFFICES: East Troy, Wisc. • MILLS: East Troy, Wisc.; Fullerton, Calif.

For More Information Write No. 184 on Inquiry Card—Page 32

Information For Your Catalog Files

ALLOY STEEL SCREWS

Handbook No. 500 gives reference data on alloy steel screws. The 36-page illustrated booklet details manufacturing methods. Specification information on the different types of screws are also described.

Mac-it Parts Company

Write No. 1 on Inquiry Card—Page 32

BARREL FINISHING

A seven-point system for scientifically controlled barrel finishing is detailed in a booklet entitled "Carbotrol 7." This 36-page multi-colored, 8½" x 11" handbook covers size and type of media, ratio of media to parts, load height, water, compounds, barrel speed, and tumbling time.

The Carborundum Company

Write No. 2 on Inquiry Card—Page 32

CASTERS AND WHEELS

Catalog No. DP104 covers a line of casters and wheels. The 40-page illustrated bulletin describes duty classifications, product series, and load capacities. Both general duty and heavy duty casters are shown, and hard tread and cushion tread wheels are featured.

Rapids-Standard Co., Inc.

Write No. 3 on Inquiry Card—Page 32

CONTAINERS

A booklet describing lithographed metal containers. Covers layout, tooling, lithography, and fabrication. Contains graphic illustrations.

J. L. Clark Manufacturing Company

Write No. 4 on Inquiry Card—Page 32

DRAFTING TABLES

Bulletin SU-620 describes drafting tables. The illustrated catalog shows the mechanism, foot pedals, frame, and parts.

Stacor Equipment Company

Write No. 5 on Inquiry Card—Page 32

FLOOR TRUCKS

A data sheet on lightweight aluminum floor trucks. Features illustrations, specifications, and construction features.

Nutting Truck and Caster Company

Write No. 6 on Inquiry Card—Page 32

GRINDING MACHINES

Bulletin 2-273A-1 describes design features, applications, and accessories of internal grinding machines. The eight-page illustrated two-color brochure covers work on shafts, gears, bushings, hub and spacer faces, and outside diameters.

Heald Machine Company

Write No. 7 on Inquiry Card—Page 32

INDUSTRIAL COILS

Bulletin No. S-30 describes custom-made industrial coils. The illustrated catalog covers miniature to giant-size coils.

Stanite Coil Corporation

Write No. 8 on Inquiry Card—Page 32

LIGHTING SUPPORTS

Bulletin G02 describes channel type lighting supports for installing wiring and electrical fixtures. Includes recommendations for applications, installation procedures, and construction features. Has photographs, illustrations, dimensional data, and table listings.

Steel City Electric Company

Write No. 9 on Inquiry Card—Page 32

MECHANICAL RUBBER PRODUCTS

Handbook M-60 covers molded, extruded, lathe cut, and punched rubber products. The 68-page bulletin contains base polymer charts giving resistances of vulcanates and recommendations for use under specific conditions. Also has a compound identification system, actual swatches, and a listing of 18 standard colors. Typical custom molded products are illustrated and over 500 standard parts are drawn to scale.

Lavelle Rubber Company

Write No. 10 on Inquiry Card—Page 32

METAL FORMING

Bulletin 601b covers facilities for wire and strip metal forming, stampings, and assemblies. Illustrated with photographs of typical parts, the data sheet lists maximum dimensions of work that can be formed.

American Machine and Metals, Inc.

Write No. 11 on Inquiry Card—Page 32

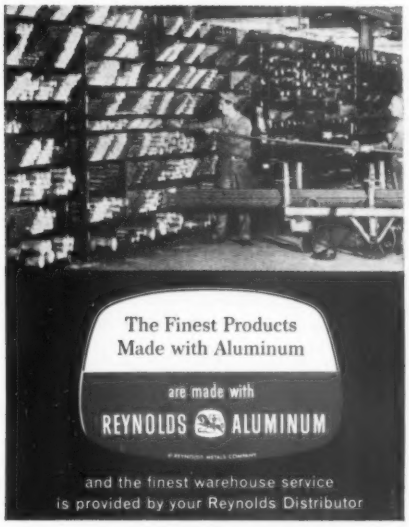
MOTORS

Bulletin No. F-1975 covers turbine pump motors, type HV-1. The full-color brochure contains a cross-section of the motor and a full explanation of its design features. Also describes the Microset coupling.

U. S. Electrical Motors Inc.

Write No. 12 on Inquiry Card—Page 32

"I made warehouse space into working space . . . by relying on the Reynolds Distributor for all my aluminum stock."



You couldn't possibly carry every alloy and size of aluminum you might need. That's why your Reynolds Distributor is at your service. He can . . . and does!

He can often cut your fabricating costs by supplying the exact alloy for fastest machining . . or by providing the size that means minimum scrap. Even more than that, he saves you floor space by stocking a complete selection of aluminum products you might need . . . in quantities you might call for. You never have to carry a surplus of aluminum that costs money every day it's not used. Your Reynolds Distributor has it, and he can get it to you *fast!*

Watch Reynolds TV shows
"ALL-STAR GOLF" and **"ADVENTURES IN PARADISE"**— ABC-TV

FOR FAST DELIVERY OF ALUMINUM, CALL THE REYNOLDS DISTRIBUTOR

Check the yellow pages of your telephone directory, under "Aluminum"

For More Information Write No. 185 on Inquiry Card—Page 32

Catalog Files

PLATINUM PRODUCTS

A 20-page catalog covering a standard line of platinum products and chemicals. Describes a variety of items that can be manufactured to specifications.

J. Bishop & Co.

Write No. 13 on Inquiry Card—Page 32

PUMPS (TURBINE TYPE)

Bulletin #S-111 illustrates and describes features of turbine type pumps. Also includes exploded views, selection tables, limitation charts, dimensions, and specifications.

New York Air Brake Company

Write No. 14 on Inquiry Card—Page 32

PUMPS (WATER INJECTION)

An illustrated catalog sheet covering water injection pumps. Describes the performance and specifications of Model #188.

Curtiss-Wright Corp.

Write No. 15 on Inquiry Card—Page 32

SAFETY SWITCHES

A catalog covering a line of light, standard, and heavy duty safety switches. Contains specifying information, including dimensions, capacities, voltages, and horsepower ratings.

Frank Adam Electric Company

Write No. 16 on Inquiry Card—Page 32

VIBRATORS

Bulletin No. 1016E describes a 3-hp model vibrator for precision finishing of metal, plastic, or wooden parts. The four-page letterhead-size bulletin gives general information, construction features, and detailed specifications.

Lord Chemical Corp.

Write No. 17 on Inquiry Card—Page 32

TEST after TEST

proves the economy of using CLE-FORGE SPECIAL PURPOSE DRILLS

Time after time CLE-FORGE Special Purpose Drills have clearly demonstrated their ability to produce *more holes* at *lower cost,* as proved by hundreds of actual tests in customers' plants. Typical records show that CLE-FORGE Special Purpose Drills . . .

. . . produce 10 times more holes per grind . . . increase production 80% . . . double the number of holes per grind . . . cut cost per hole . . . eliminate breakage . . . speed production at no increase in tool cost . . . average 13,000 more holes per grind.

These are not "special" tools, but are stock drills at regular prices . . . available for immediate delivery.

For greatest economy, CLE-FORGE Special Purpose Drills can be ordered with tangs (at no extra cost) and used with CLEVELAND Split Sleeves. Instead of paying for a taper shank on every drill, you get the needed length with a CLEVELAND Split Sleeve—which outlasts many drills.

If you have a problem of high drilling costs, perhaps a CLEVELAND Service Representative can help you solve it with CLE-FORGE Special Purpose Drills. Contact our nearest Stockroom, or . . .

TELEPHONE YOUR INDUSTRIAL SUPPLY DISTRIBUTOR

for CLEVELAND Quality Tools . . . *prompt delivery from stock*

THE CLEVELAND TWIST DRILL CO.

1242 East 49th Street • Cleveland 14, Ohio

Stockrooms: New York • Atlanta • Cleveland • Detroit • Chicago • Dallas • Los Angeles • San Francisco

For More Information Write No. 187 on Inquiry Card—Page 32

"Build us a plant,". . . .we said, "to step up spring service to the mid-continent"

and here it is . . .

newest, most modern springmaking plant in the world

Ground broken in June . . . now beginning operation . . . this modern plant of our Gibson Division means improved quality, production efficiency and customer service — the prime objectives of Associated Spring Corporation. In the mid-continent region, for example, we now provide in addition to this plant, a new sales and engineering office in Chicago, plus expanded operations in the Milwaukee Division.

Here is further evidence of adapting to needs of industrial markets—already demonstrated in the strategic location of other Associated Spring Divisions and sales offices throughout the United States, Canada and Puerto Rico. It's also assurance of progress, stability, and responsibility that you expect from the leader in precision mechanical springs and small stampings.

5912

Associated Spring Corporation **General Offices: Bristol, Connecticut**

Wallace Barnes Division, Bristol, Conn. and Syracuse, N. Y.
Gibson Division, Mattoon, Ill.
Chicago Sales Office, Chicago, Ill.
Milwaukee Division, Milwaukee, Wis.
Ohio Division, Dayton, Ohio
Raymond Manufacturing Division, Corry, Penna.
Cleveland Sales Office, Cleveland, Ohio
Seaboard Pacific Division, Gardena, Calif.
San Francisco Sales Office, Saratoga, Calif.
B-G-R Division, Plymouth and Ann Arbor, Mich.
F. N. Manross and Sons Division, Bristol, Conn.
Dunbar Brothers Division, Bristol, Conn.
Wallace Barnes Steel Division, Bristol, Conn.
Subsidiaries—Wallace Barnes Co., Ltd., Hamilton, Ont. and Montreal, Que.
Associated Spring of Puerto Rico, Inc., Carolina, P.R.

For More Information Write No. 189 on Inquiry Card—Page 32

Letters To The Editor

FOREIGN SOURCES

Dear Sir:

We are initiating a foreign market survey to investigate the purchasing possibilities of buying several of our component parts from foreign sources.

We would appreciate the following information, if available:
(1) Company names and addresses of foreign electrical manufacturers.
(2) A central point or agency which has close contact with European and Japanese markets.
(3) Your recommendations, in general, as to the best way to conduct a survey of this kind.

Name Withheld

• *The commercial attache at the Washington Embassy of the various countries will be more than happy to assist in developing sources of supply. The European Community Information Service, 220 Southern Bldg., Washington 5, D. C. will also provide information on trade with its six member nations (Belgium, Netherlands, Luxembourg, France, Italy and West Germany).*

TIME FOR THE HARD BUY

Dear Sir:

Your editorial ("Purchasing and Profits") in the August 31 issue of PURCHASING Magazine was most timely, if not overdue.

I am certainly one who subscribes to the concept that constructive criticism published in our purchasing periodicals is an excellent tool to keep us on the track and keep our heads to an appropriate size.

However, I have become more and more dismayed in recent years as purchasing publications seem to be leaning toward the idea that doing a good buying job was incidental to keeping suppliers happy. Certainly we have an obligation in this regard, at least to the extent that it improves the suppliers and thus improves our own and national business.

Text books and sales managers' exhortations to salesmen rarely, if ever, are directed to the philosophy that purchasing people should be happy, but are rather directed toward the development of the salesmen so he can outsmart the purchasing people. I am all for this.

Anytime that our business world moves away from the hard sell and the hard buy, we are likely headed for trouble. I have felt that there has been some threat towards the development of the concept that the hard sell is o.k., but the hard buy is a somewhat disreputable activity.

Congratulations on a much needed editorial.

J. Donald Hogg
Manager, Purchasing Department
Cleveland Electric Illuminating Co.
Cleveland, Ohio

VENDOR RATING

Dear Sir:

We very much appreciate the material from PURCHASING Magazine on vendor rating systems.

With the aid of this material, we have developed a vendor rating system which will serve our needs. Our sincere thanks for your courtesy.

M. H. Wagner
Purchasing Analyst
Walker Manufacturing Company
Racine, Wisc.

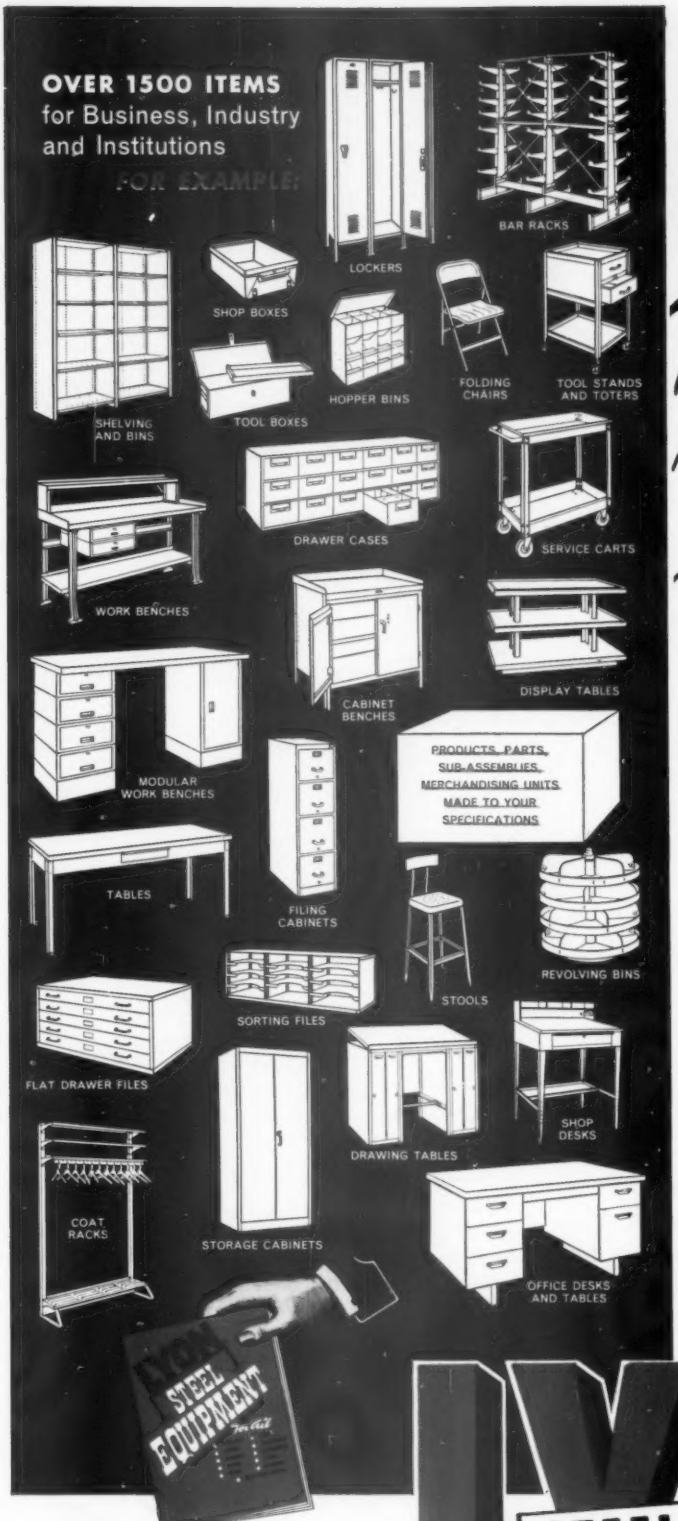
PERMISSION GRANTED

Dear Sir:

We would appreciate it very much if you would grant us permission to reproduce the article on value analysis which appeared in the June 8 issue of PURCHASING Magazine. And also the article, "How To Know When To Make or Buy" from the January 5 issue.

This material will be used by Air Force personnel attending the School of Logistics Principles of Pricing course.

S. A. Billon, Course Director
Ohio State University Research Foundation
Columbus, Ohio



THIS CATALOG ILLUSTRATES
THE WORLD'S MOST
DIVERSIFIED LINE
OF STEEL EQUIPMENT
IT'S FREE!

★ QUALITY PROTECTED BY LYON "POINT-CHECK" SYSTEM

✓ FABRICATING | ✓ ASSEMBLING
✓ FINISHING | ✓ PACKAGING

Look for the "QP" on every Lyon Carton. It is your assurance of quality equipment.

See your Lyon Dealer for prompt delivery of the world's most diversified line of steel equipment

LYON METAL PRODUCTS, INC.
General Offices: 1033 Monroe Ave., Aurora, Illinois
Factories in Aurora, Illinois and York, Pa.
Dealers and Branches in all Principal Cities

LYON®
STEEL EQUIPMENT

For More Information Write No. 191 on Inquiry Card—Page 32

TAKE THIS SHIRT-SLEEVE SHORT-CUT TO MORE EFFICIENT ASSEMBLY!

Are you open-minded about methods of permanent fastening? If so, it will pay you to call in your nearby Thomson Fastening Man. Ask him to look at your new-product sketches or old-product assembly lines. Chances are, he can tell on the spot whether you can speed production or cut costs with time-tested automatic positioning and fastening techniques. If not, he'll pass your problem, drawings or samples along to his home-office engineers who know when riveting beats stapling, welding, cementing and other permanent fastening methods.

Your Thomson Fastening Man sells by giving shirt-sleeve service. He's more interested in solving fastening problems than in selling rivets. So, use him freely as your direct contact with 74 years of fastening experience. Why not make a date with him soon? Write today to Dept. P

JTL

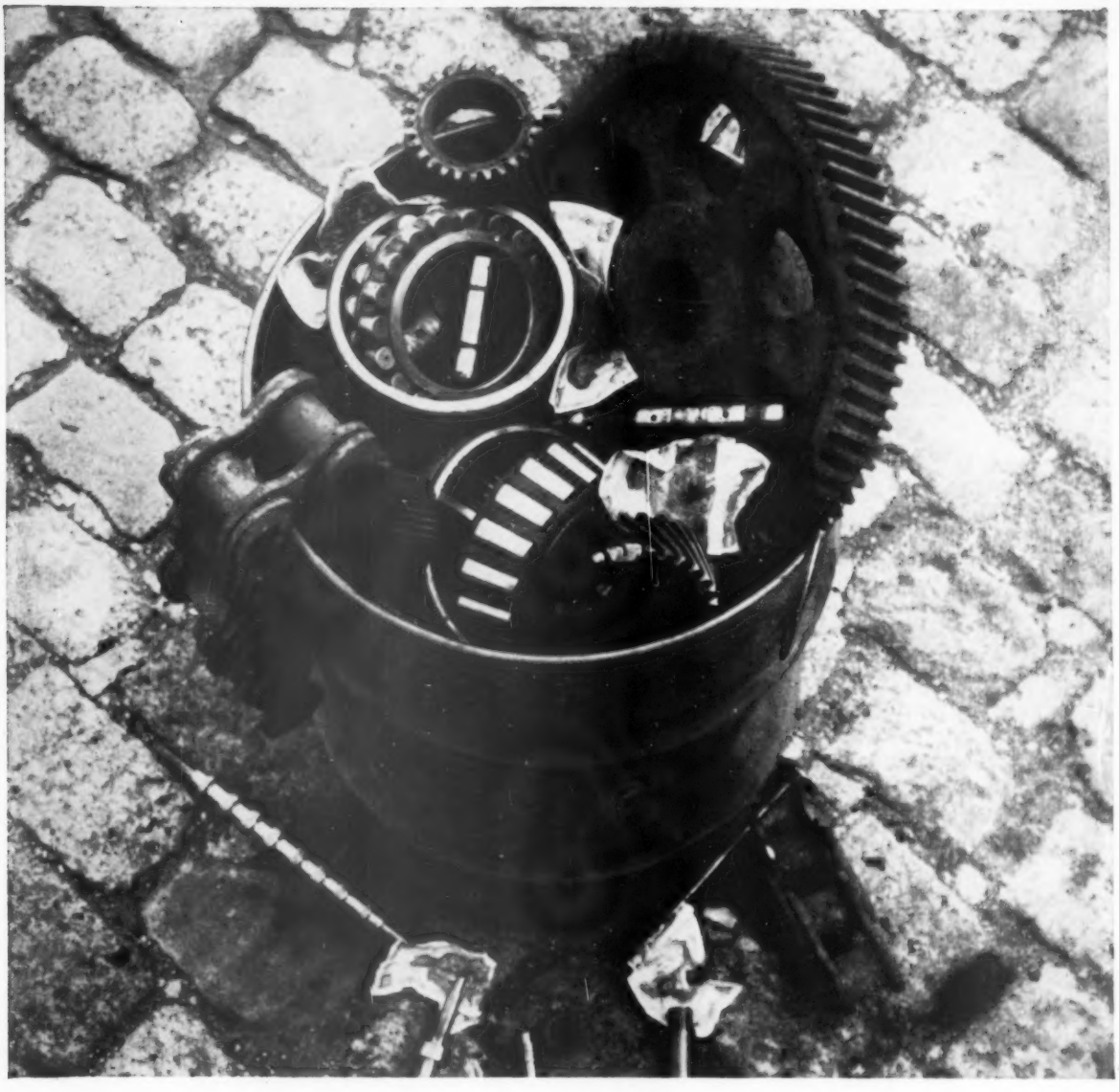
JUDSON L.

THOMSON

MFG. CO., WALTHAM 54, MASS.

Rivets and Rivet-Setting Machines

For More Information Write No. 192 on Inquiry Card—Page 32



TEXACO ORGANIZED LUBRICATION CAN HELP YOU . . .

End replacement parts waste

Does it seem that you're buying replacement parts too frequently for one or more machines in your plant? One Northeastern manufacturer replaced parts in a major machine every two weeks, marking it off as normal maintenance expense. Actually, it was abnormal—the result of faulty lubrication practices. A Texaco Lubrication Analysis spotted the trouble, cured it.

Let Texaco help you reduce purchasing as well as maintenance costs. Check and see if your plant is operating under an Organized Lubrication plan. If not, call in your local Texaco Lubrication Engineer. His advice can help you avoid waste in the buying and use of lubricants, and bring savings that can easily run up to thousands of dollars.

Send for Texaco's book "Management Practices that Control Costs via Organized Lubrication." It can mean the biggest return you ever got for a 4¢ investment!

Texaco Inc., 135 East 42nd Street, New York 17, N. Y., Dept. P-112

LUBRICATION IS A MAJOR FACTOR IN COST CONTROL

For More Information Write No. 193 on Inquiry Card—Page 32

For More Information Write No. 194 on Inquiry Card—Page 32→

PRECISE!

If accuracy is an important part of your product, don't overlook Ex-Cell-O's experience in working to *precise* dimensions when you specify component parts and assemblies!

Ex-Cell-O precision aircraft and miscellaneous production parts represent special metalworking skills; the finest equipment for close-tolerance machining; extra care in testing, assembly and inspection; modern heat treating and chemical finishing methods; and 2.5 million square feet of facilities devoted to design, development and manufacturing of precision products.

Contact your local Ex-Cell-O Representative, or send your print or parts specifications directly to Ex-Cell-O for a prompt quotation.

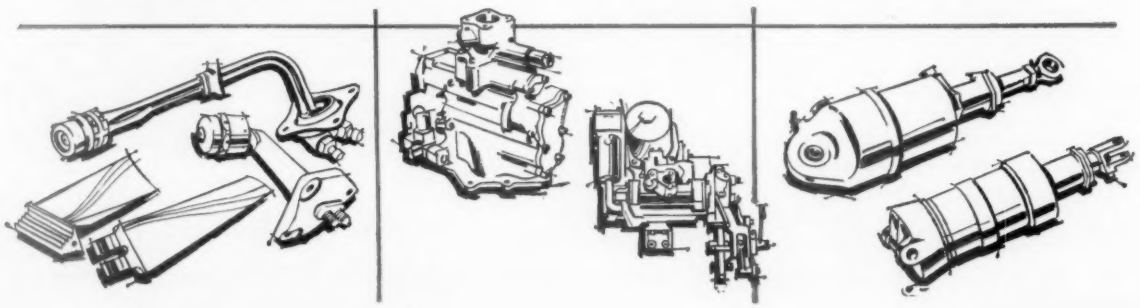
59-61

XLO EX-CELL-O FOR PRECISION

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

EX-CELL-O PRECISION PRODUCTS INCLUDE: MACHINE TOOLS • GRINDING AND BORING SPINDLES • CUTTING TOOLS • RAILROAD PINS AND BUSHINGS • DRILL JIG BUSHINGS • TORQUE ACTUATORS • THREAD AND GROOVE GAGES • GRANITE SURFACE PLATES • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT

Whatever your requirements in size, quantity, cost or service, you can take advantage of Ex-Cell-O's ability to combine toolroom accuracy with the machines and manpower needed for volume production of precision parts.



CAREFUL!

With the sure, *careful* touch of an experienced hand, veteran CTW heat-treat man hoists 72" broach from a vertical furnace.

Care in the creation of Continental Broaches takes precision manufacturing a step beyond the exactness of quality control. Thirty years of broachmaking—designing and producing thousands of standard and custom-made broaches—assures *unmatched* efficiency and performance from CTW Broaches.

Find out how Continental's experience in broach engineering, modern heat treat methods and cost-saving production processes can cut downtime and increase output in your operation. Call your local Ex-Cell-O representative, or contact Ex-Cell-O Detroit; in Canada, Colonial Tool Co., Ltd., Windsor.

59-14

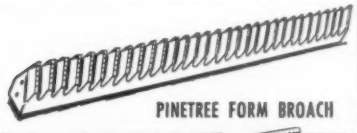
CTW

Continental TOOL WORKS

DIVISION OF

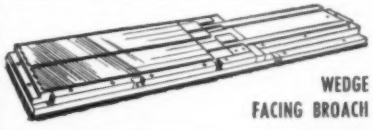
EX-CELL-O CORPORATION

DETROIT 32, MICHIGAN

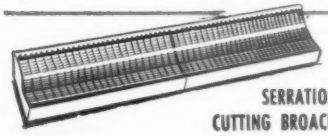


PINETREE FORM BROACH

SPIRAL SPLINE BROACH

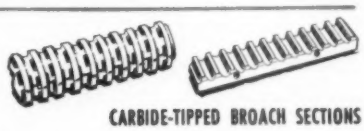


WEDGE FACING BROACH



SERRATION CUTTING BROACH

INVOLUTE SPLINE SHELL-TYPE BROACH



CARBIDE-TIPPED BROACH SECTIONS

Modernize your motors with new Super Coilife or Thermalastic

Moisture, acids, alkalis and other contaminants are locked out permanently by exclusive Westinghouse insulations . . . new Super Coilife* and Thermalastic®. These insulations are thermally stable, chemically inert. They stay elastic, hug the copper to which they are applied and increase motor operating life.

For random wound motors, new Super Coilife is a special application process using solventless epoxy encapsulation. This exclusive process controls the predetermined "thin wall" of the encapsulation for total protection and maximum thermal transfer of heat from the windings. The mirror-like orange finish will not crack or craze even under severe operating conditions.

For large motors and generators, another exclusive insulation is Thermalastic. Voltage tests prove that Thermalastic insulation has a 1000 to 1 advantage. Operating voltages can't get through the fish-scale-type barrier of large mica splittings which are locked in a memory-type elastic resin bond.

Only Westinghouse can supply these new insulation developments that will modernize your equipment and extend its life. Call your Westinghouse representative for the complete story of Westinghouse Modern Maintenance service. Special booklets on Super Coilife, B-7622, and on Thermalastic, B-7249, are available on request. Write Westinghouse Electric Corporation, P.O. Box 868, 3 Gateway Center, Pittsburgh 30, Pa.

*Trade-Mark

J-95179

YOU CAN BE SURE...IF IT'S

Westinghouse

WATCH "WESTINGHOUSE LUCILLE BALL-DESI ARNAZ SHOW" CBS TV FRIDAYS

USE WESTINGHOUSE MODERN MAINTENANCE SERVICE . . . SHOP REPAIR . . . RENEWAL PARTS . . . FIELD SERVICE

For More Information Write No. 195 on Inquiry Card—Page 32

Purchasing People In The News

Organization of a value analysis section with **D. O. Millar** as engineer-in-charge has been announced by **Allis-Chalmers Purchasing Division, Milwaukee, Wisc.** According to K. R. Geist, director of purchases, the new section will apply value analysis to all materials and services. Until his new appointment, Mr. Millar had been an engineer in Allis-Chalmers compressor department. He joined the company in 1947. He is credited with many mechanical improvements in the firm's compressors. He is a mechanical engineering graduate of the University of Wisconsin.

Connecticut Aeronautic Nuclear Engine Laboratory (CANEL), Middletown, Conn., has announced the appointment

Edward H. McVeigh

of **Edward H. McVeigh** as purchasing agent. The CANEL facility is operated by Pratt & Whitney Aircraft, which is conducting a development program for an aircraft nuclear engine under sponsorship of the Atomic Energy Commission, the Air Force and the Navy. Mr. McVeigh has been employed since 1939 by Pratt & Whitney Aircraft's purchasing department. He served as an expeditor, assistant supervisor, buyer, and, for the last five years, as a chief buyer.

Delbert A. Burman has been appointed assistant director of purchases by the **Crucible Steel Company of America, Pittsburgh, Pa.** He was formerly buyer in the

Delbert A. Burman

company's purchasing division. Mr. Burman came to Crucible in 1957 after ten years of service with the Ford Motor Company in Livonia and Dearborn, Mich. He was a buyer at Ford when he resigned to join Crucible. Mr. Burman attended the University of New Mexico and later the University of North Dakota where in 1947 he received a Bachelor of Science degree.

Donald B. Black has been named assistant purchasing agent for raw materials for the **Midland Division, The Dow Chemical**

Donald B. Black

Company, Midland, Mich. Mr. Black succeeds **E. C. Hawkins** who has entered private business. Mr. Black has been with Dow since 1941. He moved to his new position from chemicals sales where he was on special assignment. Prior to this he was supervisor of fine chemical sales. From 1942 to 1944 he was assigned to Dow's Washington, D.C., office serving as liaison with the government.

John M. D. Suesman has been promoted to director of purchases for **B-I-F Industries, Inc., Providence, R. I.** Mr. Suesman was assistant district manager for the company. He is a graduate of Brown University.

J. M. D. Suesman

Ray M. Taylor has been appointed manager of purchases for **Southern California Edison Company, Los Angeles, Calif.** He succeeds **C. P. Altland** who died. Mr. Taylor has been associated with the electric utility company for 37 years. He began work in the company's commercial department in Tulare in 1922. Moving to the Los Angeles general office in 1929, he served as a supervisor of sales. He entered the purchasing department as a buyer in 1942. He was named chief buyer in 1947 and assistant manager of purchases in 1949.

A bicycle for Johnny...

delivered personally by Interstate System

Big city service to a small town, illustrating Interstate's swift, dependable LTL service to even the smallest points on the map. We serve over 8,000 points in 26 states — with special emphasis on less-than-truckload shipments to small towns. If you have freight to move within our authority — a dozen automatic washers, assorted crates for an implement store or another bicycle for another Johnny — give us a call. We think we will be able to give you the kind of service you want. We are listed in the Yellow Pages.

FOR YOUR FILES. *A free copy of our Merchandise Time Schedule, including a complete listing of Interstate's 243 timed departures offering exceptional service to many small towns. Just address Dept. P.*

68 TERMINALS IN 26 STATES

COAST-TO-COAST SERVICE

FAST, DEPENDABLE, SURE

Grand Rapids, Michigan

MORE THAN A TRUCK LINE...A TRANSPORTATION SYSTEM

For More Information Write No. 196 on Inquiry Card—Page 32

New Trend In Steel Buying: Many profit-conscious manufacturers taking a long, hard look at steel buying policies; more and more of them cutting costs by purchasing more steel *as it's needed and ready for production* from modern Steel Service Centers.

"We've cut delivery time 75%"

says Mr. W. M. Croft, California Drop Forge Company, Los Angeles, California

"U. S. Steel Supply's prompt deliveries help us keep this drop forge hammer busy."

"On one day's notice, U. S. Steel Supply furnished us with 80,000 pounds of hot rolled bars," says Mr. J. F. Armitstead, Shop Superintendent.

"Our normal delivery time used to be four or five weeks," says Mr. Croft. "Now, we offer 7-day delivery on orders, when necessary, because we're able to get the material we need from U. S. Steel Supply on an overnight basis.

"Recently, we faced this situation: One of our aircraft customers, through an accident, lost 65 parts from a 200-unit order; he notified us immediately, and we, in turn, called U. S. Steel Supply for the material. It arrived the next day, and a week later the re-order was completed. Our customer was impressed!"

Why not take a close look at *your* steel buying policies—you'll find U. S. Steel Supply's booklet entitled "Value Analysis at Work" very helpful. Write to our Chicago Office, or call your nearest U. S. Steel Supply Steel Service Center. You'll find us in the Yellow Pages listed under *steel*.

USS is a registered trademark

U.S. Steel Supply Division of USS United States Steel

Steel Service Centers and Complete Steel Strapping Service at: Baltimore, Birmingham, Boston, Chicago, Moline, Cleveland, Houston, Dallas, Los Angeles, Memphis, Milwaukee, Newark, Southington (Conn.), Philadelphia, Seattle, Portland (Ore.), Pittsburgh, St. Louis, St. Paul, San Francisco. • General Offices: 208 South LaSalle Street, Chicago 4, Ill.

FOB—"filosofy of buying"

A MAN who was over here recently telling us how much better things were going to be in his country than in ours had better arrange for his people to take some lessons in purchasing and inventory control from the wicked capitalists. According to the Associated Press, the leader of a Ukrainian collective farm wrote to the newspaper *Izvestia* complaining that high priced farm machinery was rotting away because of a lack of spare parts. He accused some unidentified P.A.—or "buying influence"—of spending thousands of rubles to replace broken machines instead of several rubles for a spare part. A reporter from the paper hurried out and found that the situation was even worse. Garages were loaded with spare parts—but not for machines used in the area.

Maybe in the new spirit of cooperation we've been hearing about we ought to offer them a couple of tearsheets that could help them (See "A System for Buying Replacement Parts," p. 79, Sept., 1957)

While we're awaiting their request, we'd like to remind you of an old gag that's still valid. The top newspapers in the Soviet Union are *Pravda* (Truth) and *Izvestia* (News). A U.S. correspondent in Moscow, after years of studying them, summed them up this way: "There's no pravda in *Izvestia* and no izvestia in *Pravda*."

• •

IF YOU'RE keeping tabs on salary scales, you'll be interested in the latest figures from the City College of New York:

1959 graduates get an average starting salary of $520 a month. The highest reported salary, $750 a month, went to an electrical engineer. Average monthly salary of all engineers was $495. Physicists averaged $504, and liberal arts graduates $344. (That $750

"Most of our buying is done by electronic brains. . ."

man certainly pulled the general average up.)

One statistic may indicate that industry isn't as interested in liberal arts graduates as a lot of recent speeches, articles, etc. would lead you to think: Liberal arts graduates entering Civil Service —where engineering wage scales are about $100 a month lower than those in industry—receive on the average about $10 a month more than industry offers.

• •

WHAT DOES a busy purchasing agent do when he's not busy purchasing? Almost everything, according to a report on "Extracurricular Activities of Purchasing Departments" in the lively bulletin of the National Association of Newspaper Purchasing Executives. Bulletin Editor Owen Lewis of the Winston-Salem *Journal & Sentinel* surveyed the members on non-buying duties and found they ranged across 35 different activities. These included safety, personnel, cafeteria, central stenographic, storeroom, building administration, etc., etc. H. H. Eastus, *Dallas Morning News,* summed up his situation thus: "You name it, we will handle—particularly if it's an oddball."

Lou Davis, The Los Angeles *Times-Mirror,* replied with a bit of philosophy that any good purchasing man could accept:

"To a large extent, of course, additional duties taken over by purchasing will depend on the number and quality of the personnel in the department, and the volume of purchasing required. But whenever possible, purchasing should rightly assume additional management functions, enhancing its position as a member of the management team. It should likewise try to avoid petty, troublesome duties cast off by other departments, tending to downgrade the status of purchasing.

"But first, last, and always, whatever else we do, let's do a good, thorough job of purchasing."

are you shock-proof?

Ever sit in a traffic-trapped taxi for an hour . . . only to find your destination was just around the corner? Ever build a patio . . . only to find a contractor would have done it for less than the cost of your materials? Ever sweat six months over a problem on the job . . . only to find the solution had been available by picking up the phone?

Carpenter can't shock-proof you from everything, but we *can* help you with the application of electronic, magnetic and electrical alloys. No matter how difficult your problem, there's an excellent chance that our continuing research and development program has already produced information to save you time and money.

In addition to leading the field in technical assistance to industry, *Carpenter* also provides the convenience and reliability of one-source supply. You name it—dimensional control, resistance control, magnetic control—*Carpenter* offers the world's widest range of alloys to meet your most critical needs.

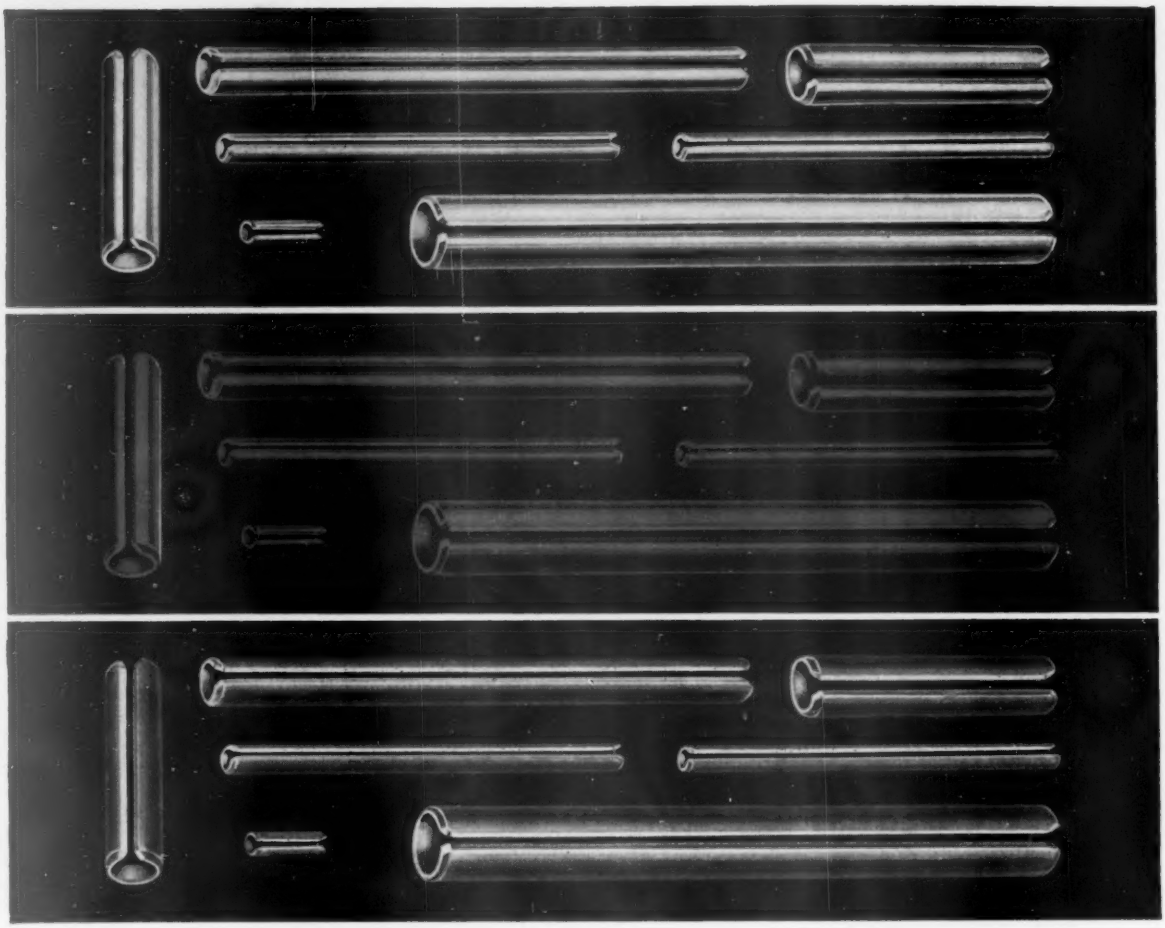
Carpenter alloys provide easy, fast fabrication, such as blanking, edge-winding, spot-welding and machining. And you waste no time experimenting to find the proper heat treating methods and temperatures. Highly specialized as these alloys are, *Carpenter* has "standardized" their properties to minimize problems from design to delivery.

Why not check *Carpenter now* . . . instead of later?

Carpenter **steel**

tool and die steels
stainless steels
electronic, magnetic and electrical alloys
high temperature alloys
special-purpose steels
tubing and pipe
fine wire specialties

The Carpenter Steel Company, Main Office and Mills, Reading, Pa.
Alloy Tube Division, Union, N. J.
Webb Wire Division, New Brunswick, N. J.
Carpenter Steel of New England, Inc., Bridgeport, Conn.



What are your Rollpin® requirements...

Corrosion-resistant steel, beryllium copper, or carbon steel? An "available" fastener with better than 90% of the catalogued size and length combinations obtainable from stock? A fastener with consistent dimensional quality control and fully dependable strength and vibration performance? A fastener that costs less than most of the pin type fasteners it replaces . . . and cuts assembly costs too?

Slotted, chamfered, cylindrical Rollpin spring-pins meet these requirements and many others. Available Rollpin inventory stands at tens of millions of pieces. Rollpin performance is consistently high because uniform shear strength, dimensions and hardness are guaranteed by high ESNA quality control standards. Investigate installed Rollpin costs as compared to grooved-type pins, taper pins, precision dowels and many types of rivets.

Standard Rollpins are made from carbon steel and Type 420 corrosion-resistant steel in stock sizes from .062″ diameter to .500″. Cadmium, zinc or phosphate finishes may be specified. They're also available in beryllium copper for applications requiring exceptional resistance to corrosion, and anti-magnetic and non-sparking properties—in diameters from .062″ to .250″.

Why not simplify and speed up your orders by sending for data on all the Rollpin sizes and materials today? Elastic Stop Nut Corporation of America, Dept. R46-1015, 2330 Vauxhall Road, Union, New Jersey.

ELASTIC STOP NUT ESNA CORPORATION OF AMERICA

For More Information Write No. 200 on Inquiry Card—Page 32

Highlights of This Issue

Purchasing in Britain

The rapid rise of purchasing as a profession in Britain and other European countries has aroused a good deal of interest among purchasing people here. Exchange of information and ideas has grown considerably in the past few years, and we are happy now to announce another forward step in this informal program. In this issue we present the first of a series of studies of the buying policies and practices of leading European firms. It is a report on purchasing at Rover Company Ltd. This outstanding auto manufacturer has many buying problems similar to yours. Some of its solutions may be different from yours, but they're all worth your attention. **See page 69.**

The P.A. as Profit-Maker

We can all agree that purchasing is indeed a profit-making function. But it takes a little more than just stating the proposition to prove it. Savings must be defined, tabulated and reported before anyone outside the department is impressed by them. Several hundred P.A.'s report on how they figure savings and report them to management in our current Purchasing Opinion Poll. Check your own practices against theirs. **See page 9.**

Giant Job With a Small Staff

How many buyers are needed to purchase $20 million worth of commodities every year? The answer, of course, depends on the nature of the business, the volume of raw materials compared to fabricated parts, and the way the purchasing department is organized. One purchasing executive in the electronics business does it with only three buyers, which may be something of a record low. Streamlined techniques, close follow-up, and excellent coordination with production and engineering are his "secrets." **See page 82.**

Two Views on Value Analysis

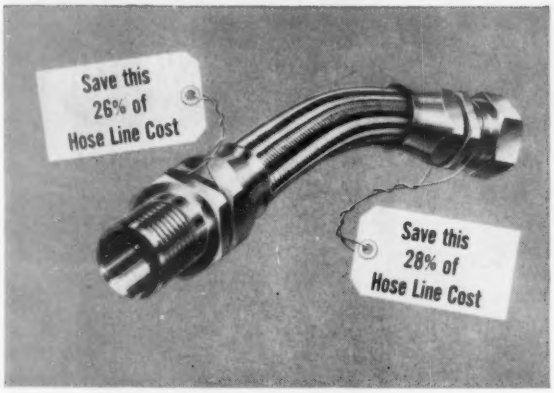
This issue contains two encouraging stories on how value analysis is being practiced outside industrial purchasing departments. One covers the value analyzing techniques of a group at the Army's missile test center in Redstone, Alabama, the other a value approach used by a supplier. Both will provide you with some excellent guides and ideas for your own value buying program. **See pages 79 and 84.**

Coming In Future Issues

Linear Programming, A New Tool for Purchasing; How to Cut Transportation Costs; How Carrier Corp. Buys

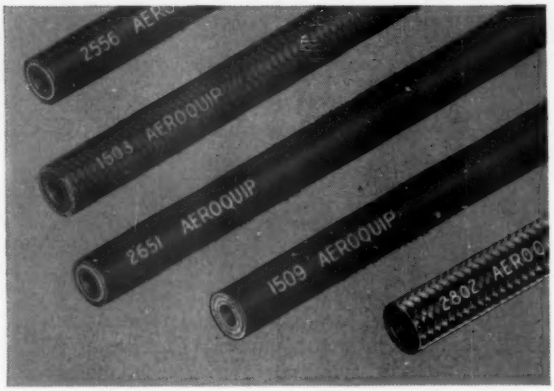
You Get 3 BIG ADVANTAGES When You Buy Aeroquip Hose Lines

Whether You Are Looking for a Competitive Advantage in Manufacturing or for Ways to Cut Plant Operating Costs, AEROQUIP CAN HELP YOU!



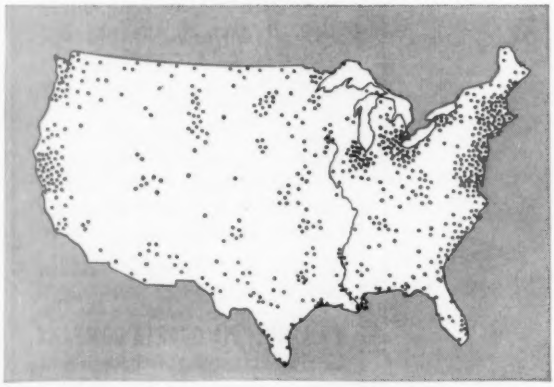
ECONOMY of Reusable Fittings— Use Them Again and Again!

Here's convenience and savings for you. Because Aeroquip fittings are reusable, they reduce the cost of hose line replacement. They are designed to be used again and again for making new hose lines.



QUALITY of Aeroquip Hose— 55 Types for Specific Uses!

Aeroquip Hose Lines are tough, durable, yet flexible. They are easily made up with Aeroquip Reusable Fittings and bench tools. Aeroquip Hose Lines serve all industrial needs . . . all fluids, hot or cold . . . at high or low pressures.



DEPENDABILITY of Supply—One of More Than 500 Aeroquip Distributors is Near You!

Your local Aeroquip Distributor is easily located through the yellow pages of your telephone directory. He's the source of high quality Aeroquip Hose Lines and Reusable Fittings. He's a factory-selected expert, ready to provide the best possible delivery of dependable Aeroquip products.

GET THE FACTS! CALL YOUR AEROQUIP DISTRIBUTOR TODAY!

Discover now how Aeroquip Flexible Hose Lines and Reusable Fittings can save your company time, trouble and money . . . how they reduce hose line inventories and assure dependable performance of equipment you use and products you make. Call your Aeroquip Distributor today!

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For More Information Write No. 202 on Inquiry Card—Page 32

The Pause That Impresses

AN AIR of uncertainty hangs over business. Just as on an opening night, both the audience and the principals are tense, expectant, and curious in varying degrees. It seems as if the economy stands poised, ready to change direction as soon as certain questions are resolved. Business is good but these are the problems that are clouding the outlook:

What will be the long-range effects, if any, of the Eisenhower-Khrushchev talks? Is a significant degree of disarmament a possibility, and if so can our economy take a cut in arms spending in stride?

Would the use of the Taft-Hartley Law in the steel strike portend a settlement in favor of labor and a defeat for the industry's hold-the-line-on-prices campaign? How much fuel will a steel price rise add to inflation fires?

How long will the Federal Reserve Board's tight money policy stay in effect? How much of a damper is it putting on plans for capital goods expansion, and ultimately on the economy as a whole?

In general, the experts tend to be more bullish than bearish. Consumers are still spending at a good clip and the moderate boom that began late last year should get a new lease on life with the end of the steel strike. There appears to be enough momentum in the economy to keep it at high levels well into 1960 if money doesn't get any tighter.

In a period of transition like this, it's a good thing for the purchasing agent to take stock of himself and to go over his department to see just how taut a ship he has to weather any economic storms ahead, whether they be inflationary or deflationary.

He must be sure that his buying practices and policies are flexible enough so that he can adapt to rapidly changing conditions. He must be equipped with more than feeble and ineffective complaints to counter any upward trend in prices. He cannot afford to be casual in his cost reduction efforts—an aggressive program is essential regardless of what stage of the business cycle we find ourselves in. He should make his voice heard now in favor of a reasonable inventory policy as opposed to the boom-or-bust methods still so popular with many managements. He must take advantage of all the economic information available to him (and often available to no one else in the company) to help himself and his management steer a clear course.

One can surrender feebly to movements of economic forces or one can accept the challenge they offer with initiative, courage and imagination. There is only one course open to the purchasing agent who considers himself a business executive.

Paul V. Farrell

PURCHASING MAGAZINE
OCTOBER 26, 1959

STEEL

still more types & tons at Ryerson than anywhere else

By the time you read this, the steel strike may be settled. We sincerely hope so. However, whether it is or not, we can still meet most steel requirements—in spite of current heavy demand.

Our inventories are still generally "good to excellent"—and once the strike ends we will begin to receive stock replenishments in a matter of days. So we should quickly be in an even better position to serve you.

Strike or no strike, as always, you can count on Ryerson to maintain its regular policy of fair prices. And as usual we are fully prepared to meet any requirements for aluminum, industrial plastics and metalworking machinery.

Your Ryerson representative is well qualified to review the facts and help you get the maximum for your steel-buying dollars. Ask him to analyze your requirements with you the next time he calls.

STEELS IN STOCK

CARBON STEEL BARS—Hot rolled and cold finished—round, square, hexagon, flat, etc.

STRUCTURALS—Channels, angles, beams, etc.

PLATES—Forming and welding, flange and firebox qualities, high carbon, E-Z-Cut, etc.

SHEETS & STRIP—More than 20 types.

TUBING—Seamless and welded mechanical, hydraulic cylinders and fluid line, structural, etc.

STAINLESS STEEL—Sheets, plates, bars, tubing, pipe and fittings. 15 types, standard and aircraft qualities.

ALLOY STEEL—Case hardening, direct hardening and heat treated, Rycut leaded alloys, aircraft quality alloys, etc.

CONSTRUCTION STEELS—Re-bars, spirals, wire fabric, post-tensioning, open web joists, etc.

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RYERSON CERTIFIED QUALITY

RYERSON STEEL®

Joseph T. Ryerson & Son, Inc., Member of the INLAND® Steel Family

STEEL • ALUMINUM • PLASTICS • METALWORKING MACHINERY

NATION'S MOST COMPLETE SERVICE CENTERS IN PRINCIPAL CITIES COAST TO COAST

For More Information Write No. 203 on Inquiry Card—Page 32

The Rover has changed a lot since this 1904 model was built (£220 with lamps extra). Both the company's products and its materials management techniques are as up-to-date as any in the world.

Materials Management at Rover Co. Ltd.

THERE'S NOTHING new about materials management at Rover Co., Ltd. in Solihull, Warwickshire, England. They've had an effective program operating for a long time. Responsibility for all phases of materials management at this well-known British auto company is in the hands of Mr. A. B. Smith. It's an extremely important job since Rover spends roughly 65% of its sales dollar on purchased parts and materials. And management recognizes this fact. That's one of the reasons Smith is one of the company's five executive directors.

It's not surprising to find that Rover is one of the leaders in materials management because it is one of the pioneers in the British auto industry. It started out making bicycles in 1877 and made its first motor car in 1904. The company currently makes two lines of vehicles—the Rover, which enjoys wide acceptance as a luxury car in the medium-priced field, and the 4-wheel drive Land Rover, a rugged vehicle designed to cross almost any kind of terrain. In addition, in 1950 the company gained the distinction of producing the world's first gas-turbine motor car. It currently makes a line of commercial gas-turbine units and is also conducting intensive development work on a new gas turbine sports car.

Rover has all the materials management problems of an American auto company plus a few extra ones that make the job even tougher. It exports about 70% of its production—sending autos to practically every country in the world. To hold a place in so many markets, Rover must offer countless variations of its models. This creates special problems in purchasing and material control. Even though the company is a small one (it has about 10,000 employees) compared to American autodom's gargantuan "Big Three," it must buy about 17,000 different production parts. In addition, it must also purchase needed supplies and equipment and uncounted thousands of past model service parts.

Not surprisingly, Rover's materials organization is big. It consists of two main groups—buying and supplies. Both groups are decentralized. Chief Buyer G. E. Dix (who reports directly to A. B. Smith, whose title is Executive Director — Supplies) supervises eight different purchasing departments in Solihull, Tyseley, London, and Acocks Green. The second main group, supplies, is supervised by Supplies Manager H. Lamb who is responsible for material control and stores. Reporting to him are four separate groups responsible for stores, material control and pre-printed requisitions at company plants.

Buyers Figure Needs

The Rover purchasing process starts with a "Sanction" issued by the board of directors. This document authorizes purchasing to buy necessary parts and materials for a given number of vehicles. From the "Sanction" and bills of material, each buying section then determines its individual

As in American companies, Rover depends upon the specialist supplier for many cost-cutting ideas. Here G. C. Brown, assistant to the chief buyer at Rover, (left) and Geoffrey Clarke, director of Messrs. Valves Ltd., discuss a new valve.

parts and materials requirements and posts them to "Master Record" cards.

Buyers do much of this detail work. The reason for this, says Smith, is that, "Buyers, in the process of breaking down specifications and preparing Master Cards acquire a considerable amount of detailed knowledge and an appreciation of parts and their applicability." There's nothing like detail work of this sort for a man to really get to know his parts. However, as will be discussed later in this article, mechanization of paperwork may make this phase of the buyer's job a thing of the past.

Progressive Buying

Like progressive American firms, Rover believes in getting competitive bids whenever possible. To get quotes, it uses a "tender" form. When there is nothing to limit competition, tender forms may go to as many as ten firms. Typically, a half dozen or more established sources are invited to bid as well as one or two newcomers. But buyers don't shoot out inquiries on a helter-skelter basis by any means. Each potential new supplier is carefully investigated. Rover purchasing executives visit vendor plants; they also get a lot of valuable tips from fellow members of the Purchasing Officers Association.

Quotes are posted to the Master Record Card. The buyer then makes his analysis and places the order. Rover's order form is fairly conventional and is of the continuous type. Orders are not pre-numbered. Instead, each purchasing department section has its own pre-fix and number series. This makes identification easy—important since each buying section keeps its own separate register of orders issued.

Like most American p. o.'s, the Rover form has "fine print" on the back listing terms and condition. Two of these clauses would surprise most American P. A.'s:

(1). Carriage charges. Rover expects goods to be delivered carriage (i. e. freight) paid unless there is specific provision for freight charges on the face of the order. It also reserves the "Right of Collection" to pick up materials in its own truck. In such cases, the buyer negotiates a freight allowance from the supplier.

(2). Empty (i. e. returnable) cases and packages. Most American P. A.'s will accept arrangements where they pay for reusable containers and then re-sell them to the supplier. Rover won't do this. It will agree only to return them. However, it does agree to maintain strict controls over such containers to make sure they are returned.

Rover gets along with fewer copies of its purchase order than most American companies with comparable purchasing operations. It makes just five with copies going to the vendor, purchasing files, material control, inspection, and cost. The supplier acknowledge's an order by tearing off and returning a slip at the bottom of its copy.

Purchases for non-productive materials are handled much as they are in American companies. Purchasing issues individual orders against requisitions. Materials that are used frequently such as petrol, oils, packaging materials, etc.—are purchased on an annual contract basis. Even though Rover purchasing is decentralized, the contracts are usually issued on a company-wide basis to get the best terms. The various works buyers then order requirements from a common contract.

Analyzing Prices

Rover must be competitive costwise. Since the bulk of its sales come from exports, its costs and prices must be in line with those of almost every other auto manufacturer in the world. As a result, Rover purchasing is extremely cost conscious. It is currently contemplating setting up a separate value analysis department to work exclusively on cost reduction.

Currently, it is operating a Project Costing Section. This group works with engineers when new models are still in the draw-

British buyers probably hold just as many meetings as their American counterparts. At Rover, the top buyers hold periodic meetings which are presided over by Chief Buyer G. E. Dix. Addressing the group, here, is H. Lamb, supplies manager.

ing stage. The objective is to have good cost estimates available long before the first vehicle is produced. Purchasing provides estimates on purchased items; planning on "make" items; and the cost department prepares the final estimates. Purchasing, planning, and cost have also teamed up on another related project: analysis of existing production items. The group sets target prices on these items to stimulate cost reduction efforts.

Rover finds that some clerical tasks facilitate value analysis. As was previously mentioned, the buyers themselves break down the over-all bills of materials, determine unit requirements, and post the Master Cards. In the process, they can readily review the purchase history of each item. Occasionally they also make special studies. One of them was a "production material price analysis." The analysis was carried out as follows:

(1) A series of "Buying Group Nos." was allocated to each buyer.

(2) A series of "Material Code Nos." was allocated to each group of materials, each part being entered under its predominant material, e.g. non-alloy steel, hides, electrical equipment, etc.

(3) A series of numbers known as "Vehicle Code Nos." was given to each of the company's products.

(4) Each buyer was then issued a batch of "Material Analysis Hollerith Cards" (punched cards) on which he was required to enter the following details:
   (a) Part Number
   (b) Description
   (c) Buying Group No.
   (d) Vehicle Code No.
   (e) Material Code No.
   (f) Price Per Set
   (g) Suppliers No.

Prices were inserted in shillings and decimals of a shilling to four places of decimals, e.g. 2/6d = 2.500.

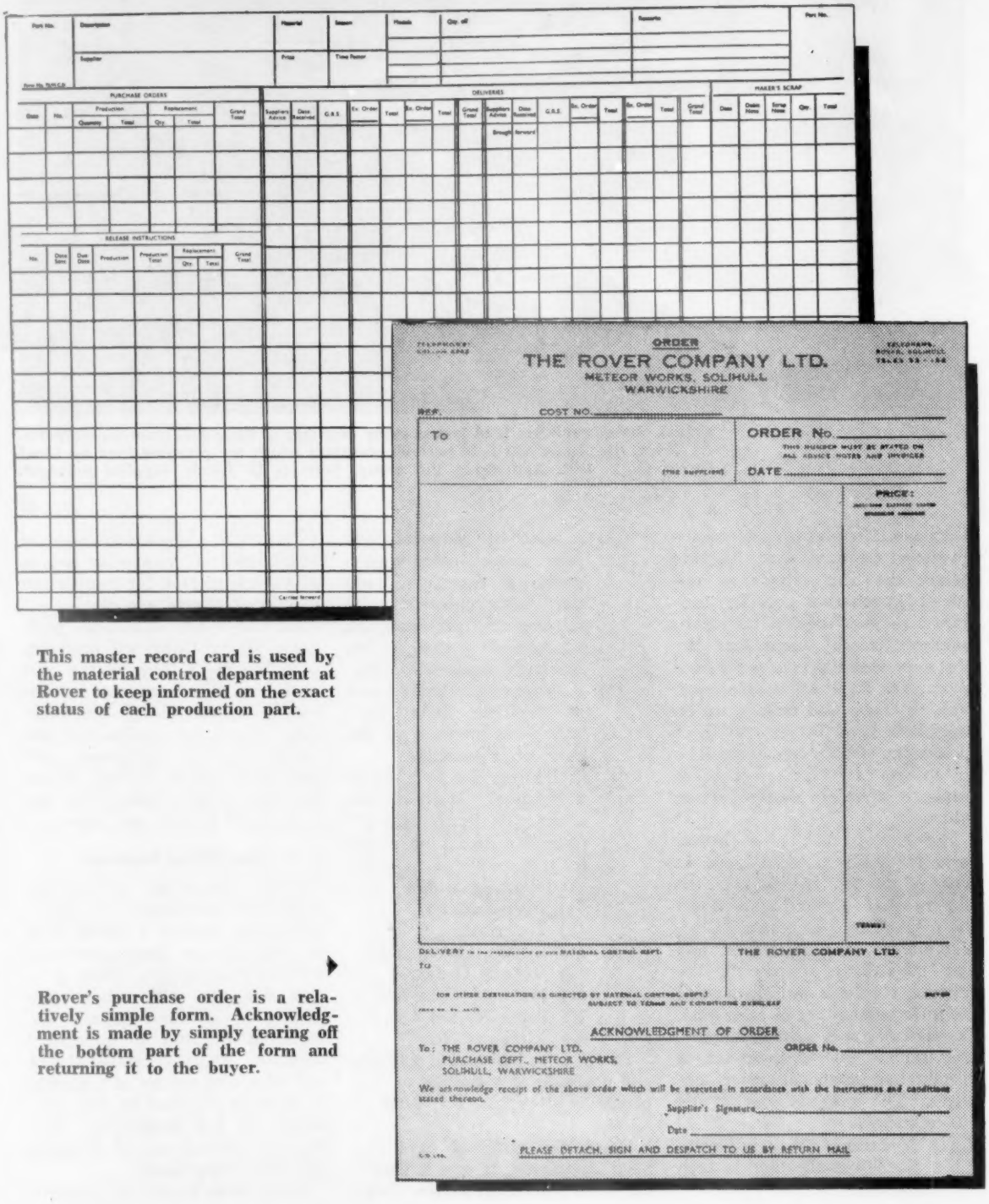
When the punched card had been completed, it was a simple matter to run off the Master Cards to provide almost any sort of breakdown of prices—for one or all vehicle groups, for comparison of buying groups, etc.

As noted before, manual posting of Master Cards will probably soon become a thing of the past at Rover. The company is currently investigating electronic data processing equipment and eventually this equipment will take over many clerical chores not only in purchasing but also in material control and stores.

Controlling Material

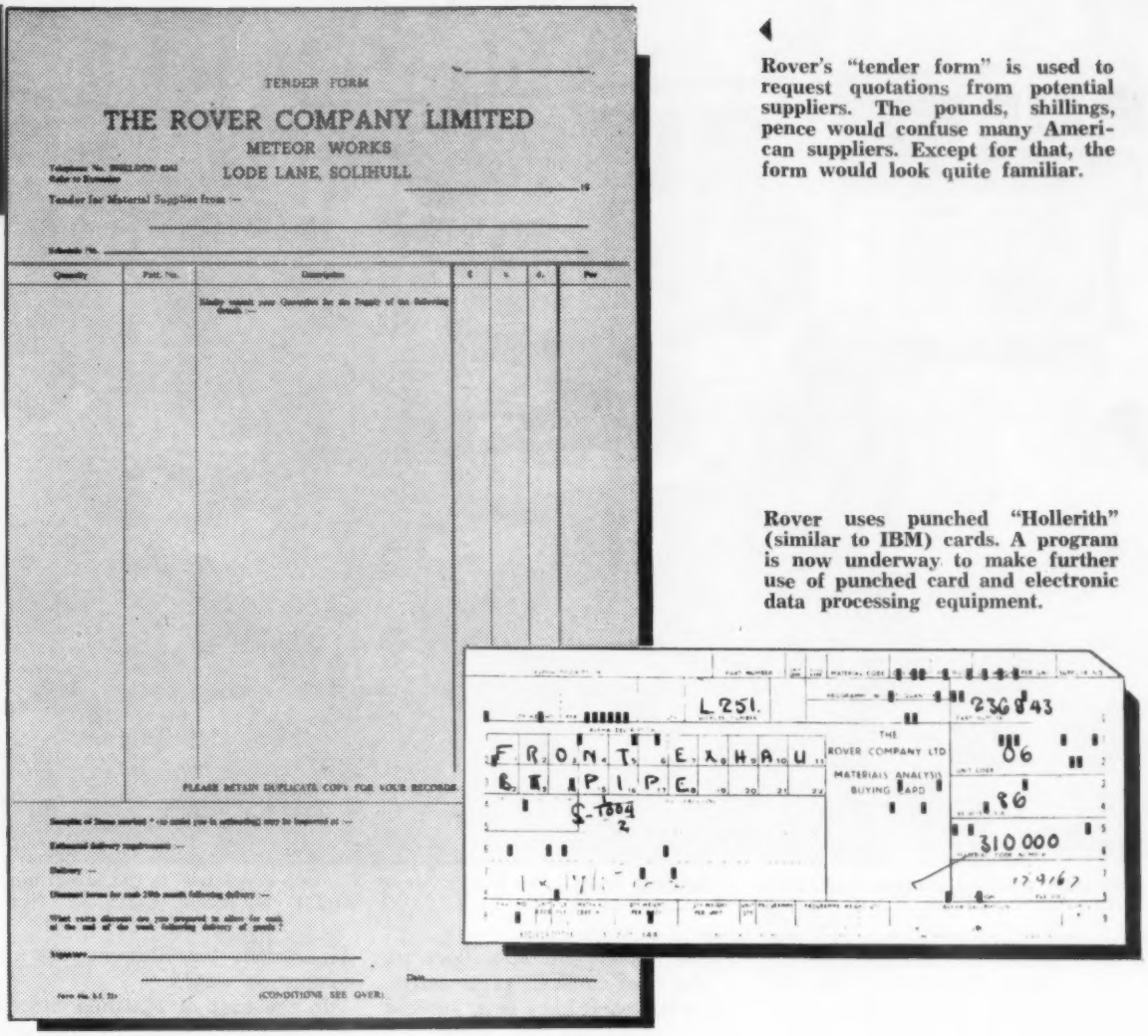
Auto companies everywhere work from relatively low inventories and require a steady flow of material to keep operating without interruption. Rover is no exception. As with other companies, its material control department is vital to successful operation. At Rover, material control schedules are set at a monthly meeting attended by representatives of the production, purchasing, material control, planning and sales departments.

From these schedules, material



This master record card is used by the material control department at Rover to keep informed on the exact status of each production part.

Rover's purchase order is a relatively simple form. Acknowledgment is made by simply tearing off the bottom part of the form and returning it to the buyer.


TENDER FORM

THE ROVER COMPANY LIMITED

METEOR WORKS

LODE LANE, SOLIHULL

Tender for Material Supplies from —

Quantity | Part No. | Description | £ | s. | d. | Per

PLEASE RETAIN DUPLICATE COPY FOR YOUR RECORDS

Signature

Date

(CONDITIONS SEE OVER)

L251.

FRONT EXHAUST PIPE

THE ROVER COMPANY LTD

MATERIALS ANALYSIS BUYING DEPT

310 000

Rover's "tender form" is used to request quotations from potential suppliers. The pounds, shillings, pence would confuse many American suppliers. Except for that, the form would look quite familiar.

Rover uses punched "Hollerith" (similar to IBM) cards. A program is now underway to make further use of punched card and electronic data processing equipment.

control then issues three-months' releases for individual parts to suppliers. It then does any necessary expediting. Most of this work is done on the telephone, but the department does have a half-dozen outside liaison men who deal with "hot spot" items or with suppliers needing expediting assistance for one reason or another. At the Solihull Works, these men divide up the work alphabetically. For example, one man might have vendors "A" through "F"; another "G" through "M", etc. On multi-source items, two men must sometimes work together, of course. At the Tyseley plant, on the other hand, expediters divide work by type of commodity handled.

Keep Parts Records

After material control and purchasing get material into the plant, the stores departments take over. Each of Rover's stores departments keeps a record of each part. These cards are called "bin boards." They are the usual record designed to record receipts, stock, and issues. Theoretical balances shown on the stock records are periodically re-checked with a physical count made by the Stock Audit Department under the direction of the company's chief accountant.

Thus far, we have discussed three basic phases of the materials cycle: buying the material, scheduling and expediting; and storage. The fourth basic phase is moving the material from stores to the point of use in the plant. This is done by a fourth group in the materials department—the preprinted requisition department.

This department gets the following information:

(1) complete specifications and all modifications of them.
(2) All production programs.
(3) A weekly summary of sales.
(4) From the planning departments, lists of all compo-

Rover's material control department at Solihull looks little different from that of hundreds of companies in the United States. The two executives in the foreground are L. N. Callaby and F. W. Allen.

nents and assembly "operation sheets" together with details of economic "quantity batch issues".

The above information is broken down into index cards, and from these a set of "operational heading plates" is made out on Adrena or Addressograph machines. Each week the master plates are used to turn out the following documents for materials that get further processing:

(1) A "stores requisition card" is sent to stores and is the authority to issue those parts for production. After issue of materials, this card is sent to the works progress department.

(2) A master "Kardex" card goes to stores with the requisition card. Apart from a general descriptive heading, this card shows the sequence of manufacturing operations and is issued from the stores with the unfinished material, and accompanies it through all its subsequent operations up to the final finished parts stores. After the parts have been entered as a receipt on the "stores bin boards," the Kardex card which has had manufacturing details entered at each operational stage, is forwarded on to the cost department.

(3) A "progress card" details the number sequence of operations, etc. This card is sent to the works progress department where it is filed until the receipt from stores of its equivalent requisition card. Then it is taken out of the holding file and used by the progress people as their work-in-progess record.

(4) A "cost office notification slip" which is sent to works progress department is forwarded on to cost department.

(5) A batch of cards, (stapled together, for each item in operational sequence, with one card for each operation) goes to the cost department for ultimate use in computing wages.

In the case of Finished Stores materials a stores requisition card only is used, exactly as that used for new material as described in note (1).

All documents relating to the same batch and part number bear the same Master Card number.

Thus Rover purchasing has responsibility for the complete purchasing cycle. In this respect, Rover is probably not a typically British firm. Most British firms, like their American counterparts, have yet to accept the concept of an integrated approach to materials. Typically they feel that the purchasing department should stick to buying from requisitions sent to it from some other department. In a few of the worst cases, of course, management doesn't even let purchasing do the buying; it accepts purchasing only as a clerical convenience.

Writing Purchase Orders Without Requisitions

AT SPEIDEL Corporation, Providence, R.I., they have eliminated the purchase order—at least for raw material and component part purchases. P.A. Tom Seavor and his three buyers make up their P.O.'s directly from factory production orders. In bypassing the requisition, Speidel purchasing has less paperwork to handle and actually ends up doing a better buying job.

Factory Production Orders

Speidel operates four divisions in manufacturing men's and women's jewelry as well as industrial products. Among the important items bought by the purchasing department are precious metals, stainless steel, and nonferrous metals. Annual purchases range between $3 million and $3.5 million.

Instead of using requisitions to buy these materials, Speidel purchasing gets a copy of all factory production orders. The production orders list the number of items to be produced on a particular run, the amount of each item, and the date when the products are to be completed.

When the production orders reach purchasing—usually well in advance of the starting date—P.A. Seavor and his men get to work. First step is to determine what raw materials will be needed.

"Take a gold bracelet for a woman's watch, for example," says Seavor. "Suppose the production order calls for a run of 1000. We have to figure out what materials are needed and then how much.

"Then we have to decide what parts to buy. A single bracelet could use 18 different parts or more—links, springs, and tubing hooks. And each part is often used many times in one bracelet. But once we know how many parts are used in each item, it's a simple job to figure out what's going to be needed in a large order."

After purchasing has broken down the production order into the raw materials and parts required, the buyers begin placing orders, following conventional purchasing practice.

System Saves Money

What are the advantages of this "no requisition" system? Mainly a reduction in paperwork. Rather than having to process hundreds of requisitions from various departments in Speidel's four divisions, purchasing has to handle only a few factory production orders. This is a fine example of reversing Parkinson's Law—as it applies to paperwork.

In addition, with the "no requisition system," Speidel gets the full benefit of P.A. Seavor's knowledge of materials and components, derived from long years of service with the company (He's also a past vice president of the N.A.P.A. for District 9). When Seavor gets a factory order, he can frequently spot places where material substitutions can be made or where new processes can be used. With a requisition it's much harder to make these changes because you can't see the overall production picture as clearly.

Some Requisitions Used

Of course, Speidel does use requisitions for some items such as MRO supplies. But in the important areas of raw materials and component parts, Speidel purchasing works directly from the production order. P.A. Seavor finds it quicker, easier, and it saves money.

Speidel P.A. Tom Seavor and secretary.
"I think we actually do a better buying job when we don't use requisitions."

A Small Purchasing Department With a Big-Time Look

In the last 10 years, the purchasing department at Carter's Ink Co. has undergone an amazing transformation. Just by following the book on good purchasing procedures, the department has reached a truly professional level.

By Ned Kellogg

Carter's Ink P. A. Russ Briggs—one of purchasing's best salesmen.

THE PURCHASING department at Carter's Ink Co., Cambridge, Mass., is small (four people), progressive—and a profit maker. Ten years ago, this wasn't the case. The department at that time was definitely on the primitive side.

Much of the credit for the transformation that has taken place goes to Russ Briggs, an alert, aggressive purchasing salesman, who says he got into purchasing "by mistake." Actually it was a case of management's recognizing Briggs' executive potential and tapping him for the job.

Not New—But Sound

Basically what Briggs has done since taking over purchasing at Carter's Ink (it's now more typewriter ribbon and carbon paper than ink) is to put the department on a more organized, more professional level. It can't be said that there is anything startlingly new about the way Carter's Ink buys. Most of the policies and procedures Briggs adopted have their counterparts in other companies where purchasing has come of age. But what is amazing is how dramatically the department has developed in 10 brief years. The details of some of the new-look buying techniques Briggs put through, make a good basic primer for any small company P.A. who is having trouble getting his department to operate the way he thinks it should.

Brigg's forceful approach to the many problems he faced is most apparent in the way he tackled the paperwork maze. "We were reaching the point where we needed files for our files," is the way he puts it.

One of the first problems he went after was followup. The reason: "Because it's the weakest link in almost every purchasing department."

The going wasn't as easy as might have been expected. Briggs made a couple of false starts before he got what he wanted. However, because of his trial and error experience, Briggs rates as a real authority on followup.

He started with a rambleshamble tub file system. All open orders were placed in the tub and one of the girls was supposed to go through the orders in the bin each day and followup any that needed attention. It didn't work. It was the kind of job the girls would put off until they had finished everything else. As a result, there were a number of foul-ups.

Then Briggs put in a visible card system with metal flags to signal followup dates. It's a system that works for many purchasing departments, but it didn't satisfy Briggs. "The flags kept falling off and people from other departments would come in and mess up the cards."

Foolproof Followup

Finally he hit on what he calls a foolproof follow-up system. He reverted to the tub file, only this time on a more systematic basis. The tub is split in two sections. One copy of the purchase order (the work copy) is filed by commodity code number (or alphabetically by vendor name if there is no number). A second copy of

the purchase order (the follow-up copy) is placed in a date file—seven days from the date the p.o was issued. Every day a girl goes through the file for that day and follows up any orders which need action. If there is any problem in matching a vendor acknowledgment with the follow-up copy, this can be easily straightened out by merely checking the commodity file for the work copy of the p.o.

After the vendor acknowledgment has been received, the follow up copy and the acknowledgment are filed together in the date file corresponding to the delivery date. When the delivery date comes due, the order is immediately expedited if delivery has not already been made.

What it boils down to is that every day a girl checks the appropriate date file and takes whatever action is necessary for both acknowledgment and delivery. "It's a fool-proof system," says Briggs.

As another refinement in his follow-up system, Briggs dropped the acknowledgment copy from his purchase order set. Before he did this, he sent a form letter to all his vendors advising them that they would be expected to send their own acknowledgment copy.

No Phone Calls

One follow-up technique that Briggs learned from experience is to send telegrams rather than making phone calls. "A telegram is almost as fast," says Briggs, "and it gives the vendor time to prepare a definite answer when he calls or wires back. If you telephone, you usually catch the vendor off guard and have to wait while he tries to find out what's going on."

Another improvement Briggs made some time ago was the switch to traveling requisitions. It's standard for the majority of purchasing departments, but it made quite a difference to the Carter operation back in its primitive purchasing days. Incidentally, introduction of the traveling requisition made it possible for Briggs to cut his staff from five to four since it eliminated the job of checking price books.

One more standard purchasing technique Briggs adopted is the blanket order. It's a change that he estimates has cut his paperwork 20%.

What happened is this: Briggs sensed that he was placing too many orders for non-production materials. He made a count of the orders placed with the 25 main suppliers of these items and found that in the course of a year he had issued more than 1000 p.o.'s to these companies.

His next step: a form letter to the 25 vendors informing them that they had been chosen as the chief supply source for certain items for the year. One purchase order was sent to each of the 25 suppliers to cover all purchases for the year. Arrangements were made so that vendors would take orders over the phone.

As in many blanket order systems, Briggs uses the requisition to keep track of purchases made against the blanket order. The requisitioner sends two copies of the requisition to purchasing.

A "foolproof" follow-up system. Purchase orders are filed both by commodity and by follow-up dates. The girl in charge of the file checks the "today" file every day so there's no chance of a slip-up.

Purchasing sends one copy to receiving and enters prices on the other which is later routed to accounting.

Promotes Purchasing

The various systems Briggs has introduced at Carter's Ink have done a lot to improve the company's purchasing. But probably

that we will be able to make savings of approximately $1500 in purchases from this new vendor.

5. New Adhesive Packages. The second quarter report noted that the Purchasing Department had done much investigation work on a new group of Adhesive products. During the third quarter these packages were approved. The Purchasing Department placed orders for all package parts, some outside packaging and Adhesives in the month of September. By constant attention and follow-up by the Purchasing Department these new items will be available about November 1 as requested by the Marketing Division. Special mention is made of this seemingly routine buying procedure because it was outside of routine in that it was a crash program and required special effort to accomplish the desired results.

6. Carter Marker Packages. Three new Carter Marker packages will be marketed early in the fourth quarter due to the special efforts of several of our vendors and the Purchasing Department. This was another crash program requested by Marketing and required special attention to accomplish.

7. New 10¢ Ink Glass. Late in the third quarter the Merchandise Department requested a rush re-design of our 10¢ Ink package. I made a trip to the Hazel-Atlas Glass Company in West Virginia and to the Armstrong Glass Company in Pennsylvania. Local contact was made with Owens-Illinois Glass. As a result models and prices were made available in approximately 1½ weeks for this new program. It is expected that the re-design will be accomplished early in the fourth quarter with a considerable savings as a result of purchases of the new package.

Purchasing Department and Others

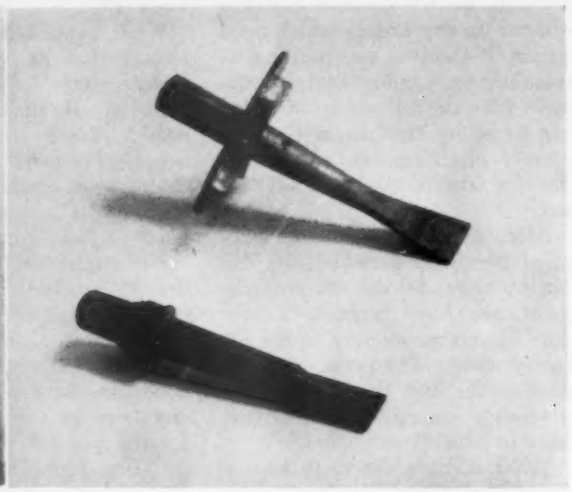
1. New Ribbon Package. My report dated August 3, 1956 indicated that work had started on a new Ribbon package expected to save approximately $35,000 annually in package cost and labor. This proposal has now cleared Purchasing and Engineering and is at present awaiting Marketing go-ahead. Mention is made in this report of this project due to the fact that additional work was done on this new Ribbon package in the third quarter. It is also worthy of note that in view of the sizable savings available to the Company that it be here stated that this project is now held up in the Merchandising Department awaiting decision and action.

2. One Quart Rubber Cement Cans. It was pointed out by the Purchasing Department to the Engineering Department

P. A. Briggs never misses a chance to promote purchasing. One technique he uses is a quarterly purchasing report which summarizes the department's achievements.

Value Analysis in a Small Department

P. A. Briggs: "The money's in the drums."



The difference between rubber and plastic—$35,000.

A lot of P.A.'s say it can't be done. They claim that value analysis is only for the G.E.'s and the Ford's; that in a small department there just isn't the time or the manpower to work on VA.

But at Carter's Ink Co., the two-man, two-girl purchasing department recently made some important value analysis cost reductions.

It's hard to believe but the photo at the right showing two paste applicators represents a $35,000-per-year cost reduction. That's what happened when Carter's switched from rubber applicators to plastic and eliminated a separate cap and washer assembly at the same time. The idea resulted from some intensive digging by P.A. Russ Briggs and the cooperation of one of his vendors.

No dollar sign can be placed on the value analysis cost reduction represented by the photo on the left, but it's substantial. The important item here is the row of chemical drums. Previously Carter's purchased chemicals such as glycerine, in 50 gallon drums. But after analyzing this routine, P.A. Briggs decided to buy the chemicals in bulk and have them pumped into the 50 gallon drums which he keeps on the receiving dock. It's proved to be a lot cheaper than the old method of having the chemicals delivered in drums.

Right now Carter's purchasing is studying the possibility of using plastic bottles instead of glass—mainly because of the freight advantage they would gain. Also in the works is a hush-hush change involving the typewriter ribbons Carter's sells.

It just goes to show . . .

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even more important than his systems has been his attitude to his job as a purchasing executive. He promotes purchasing throughout the company every working day. You can sense the way he feels from some of his off-hand comments: "Purchasing is the Grand Central Station of every company. . . . Every day as I come to work I try to figure out how to make purchasing a little more important in the company's overall operations . . . The purchasing agent who forgets that every time he signs a purchase order he's affecting the whole company, ought to get out."

Just to make certain that there's a permanent record of what purchasing is doing, Briggs makes up a quarterly purchasing report (see p. 77). "Frankly it's a brag sheet," says Briggs. "But it's in a good cause." Basically what the report does is to present, in condensed form, achievements purchasing has made during the quarter—both on its own and with the help of other departments. So far, Briggs hasn't had much trouble finding things to write about.

Castings: Buy Value Instead of Weight

To many buyers, castings are so many hunks of metal, to be bought by the pound. But design, materials used, and foundry practices all affect total ultimate cost. Cooperative value analysis by buyer and vendor will pay off in lower costs and better quality.

By A. W. Gruer, Jr.

UP TO NOW suppliers may have been a little slow in grasping the full meaning and importance of value analysis. But there is a growing trend among vendors (1) to seek participation in the value analysis programs of their customers, and (2) to introduce value concepts to those of their customers who do not have organized value buying programs.

This trend is particularly noticeable among progressive foundries. The approach is to get customers and prospects to analyze every part on the basis of two simple questions: Can this be made as a ferrous casting? Would a ferrous casting give more value than a die casting, a weldment, a forging, an extrusion, a stamping, or a molded plastic part.

Obviously, the design of the part, the function it is to perform, and the conditions to which it is subjected will determine the final choice. No one material or process is ideal, and usually a final choice is a compromise.

Our aim then is to get the castings buyers and users to look on the ferrous casting process in depth and try to determine if it can help them:

FUNCTIONALLY

1) To obtain rapid translation of design into a finished product?
2) To produce complex design?
3) To obtain metal placement for maximum physical and mechanical properties?
4) To improve product appearance and usefulness?
5) To produce one integral unit versus numerous parts?
6) To obtain dependable service?

ECONOMICALLY

1) To save assembly, material handling, scheduling, machining, welding, and other processing costs?
2) To save engineering time?
3) To save costs for dies, jigs, and fixtures?
4) To save in indirect labor and overhead?

MATERIALLY

1) To obtain a wider range of materials, both standard and non-standard?
2) To obtain tailor-made materials for special application?
3) To use same pattern equipment with some various materials, where shrinkage rule does not vary substantially?
4) To facilitate experimentation until proper material can be selected?

Following are a few representative case histories of how extra cost was eliminated and/or extra value added by analyzing parts in the light of the above questions. The case histories are admittedly limited in scope, yet they show clearly that value analysis very definitely is needed in castings buying—on the part of both the buyer and the foundry. Castings buyers can no longer afford the casual "Quote on 2400 pieces from drawings attached . . ." approach. Increased profits are theirs, if they are willing to pay a price for something other than just raw material or hunks of metal. Their values are in improved design, proper materials, better service, and better foundry practices to give lower ultimate costs.

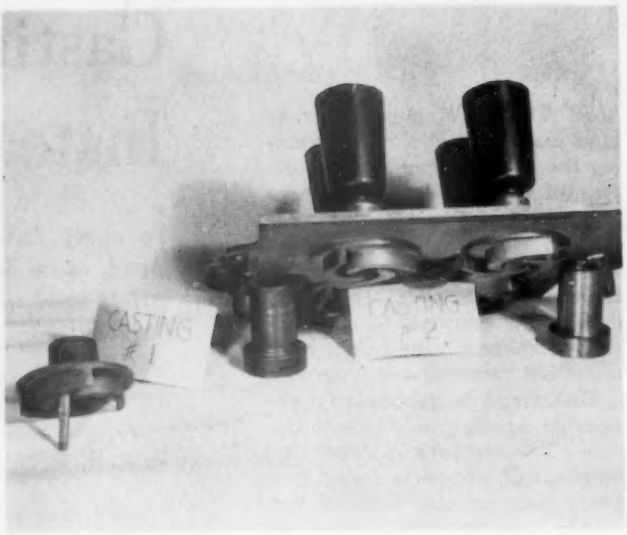
(turn page)

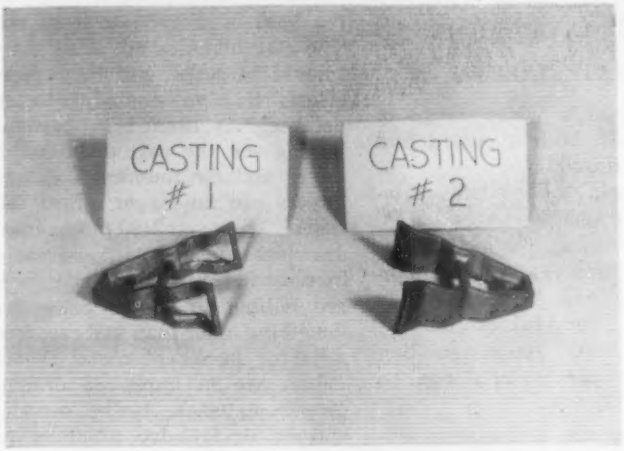
The rather sardonic interpretations of a plain old casting shown above were drawn up especially for Carondelet Foundry Co. The company will be glad to send 10x12" or 11x14" copies to P.A.'s requesting them.

Mr. Gruer is manager of sales and marketing for Carondelet Foundry Company, St. Louis, Mo. His article is based on a talk given to the Purchasing Agents Association of St. Louis.

Savings with better patterns and molding techniques: Casting No. 1 is molded on a bench with a loose pattern, one per mold, and with the gates and risers cut in the mold. No. 2 is molded on a squeezer with a mounted pattern, four per mold, and with gates and risers part of the pattern equipment.

	CASTING #1	CASTING #2
PATTERN EQUIPMENT:	LOOSE	MOUNTED
MOLDING METHOD:	BENCH	SQUEEZER
PATTERNS PER MOLD:	1	4
EXTRA PATTERN CHARGE:	-----	$150.00
PRICE PER CASTING:	$7.30 ea.	$5.92 ea.
SAVINGS PER CASTING:		$1.38 ea.





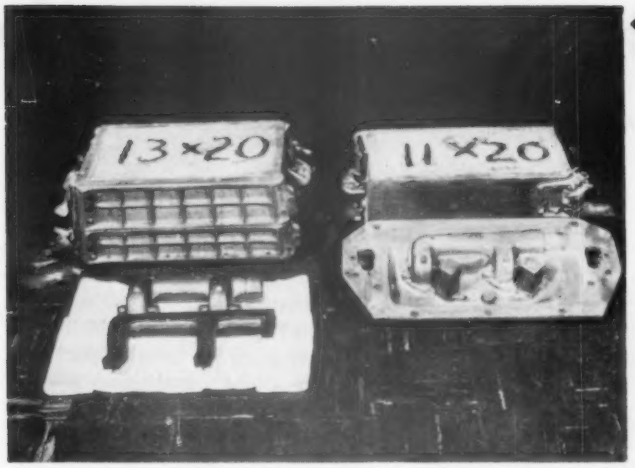
Savings from re-design: Casting No. 1, with open area in legs, requires a match plate with four patterns attached, two core boxes, and eight cores. No. 2, which performs the same function without the open areas, requires only a mounted pattern with four patterns attached. (No. 2, incidentally, weighs more but is 14% lower in price).

	CASTING #1	CASTING #2
MATERIAL:	(Heat Resistant Alloy)	
WEIGHT:	.75 lbs.	.90 lbs.
PRICE PER CASTING:	$1.07 ea.	$0.92 ea.
COST PER POUND:	$1.29 lb.	$1.02 lb.

Savings from close control of material and melting: Joint analysis and experimentation by foundry and user showed that a finer-grained, higher-priced casting would have a lower ultimate cost than casting being used. The castings are subject to high temperature, oxidation, impact, and abrasion.

	CASTING #1	CASTING #2
MATERIAL:	ACI Type HC	ACI Type HC
GRAIN STRUCTURE:	Coarse	Fine
WEIGHT OF CASTING:	10.0 lbs.	15.75 lbs.
PRICE PER CASTING:	$3.89 ea. (38.9¢ lb.)	$7.88 ea. (50.0¢ lb.)
FAILURE:	Breakage and burn out	Eventual burn out
LIFE OF CASTING:	70 weeks	148 weeks
COST PER CASTING PER WK.:	$.0556	$.0532
WITH APPROX. 20,000 BARS IN USE - 148 WK. COST:	$164,554	$157,472
SAVINGS FOR 148 WK. PERIOD: (On bars only)	--	$7,082

In addition, savings realized by longer life in; less maintenance, less shut-down time, less replacement inventory, less indirect labor.

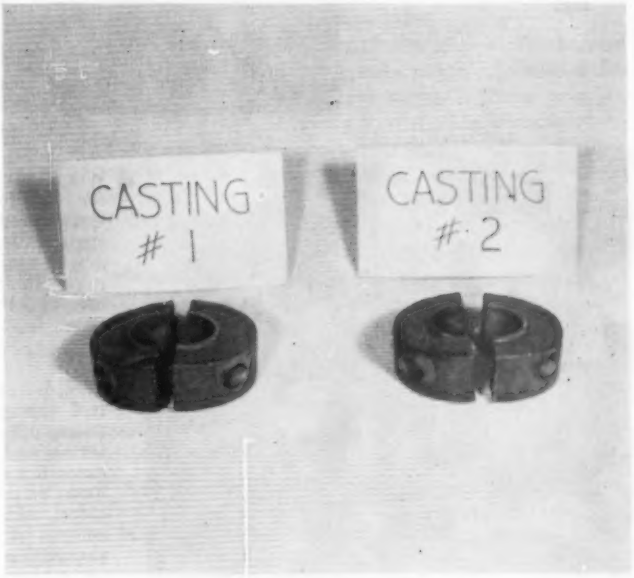


Savings from change in pattern equipment and size of mold: The casting at left was molded first in a 13 x 20″ mold. By improving the method of gating and risering, the foundry was able to produce sounder castings, reduce rejects and foundry scrap. The pattern size was reduced to work in an 11 x 20″ mold.

	CASTING #1	CASTING #2
PATTERN SIZE & MOLD SIZE:	13" x 20"	11" x 20"
REDUCTION IN MOLD WEIGHT:	—	-15%
COST TO CHANGE PATTERN:	—	$80.00
PRICE PER CASTING:	$7.85 ea.	$7.26 ea.

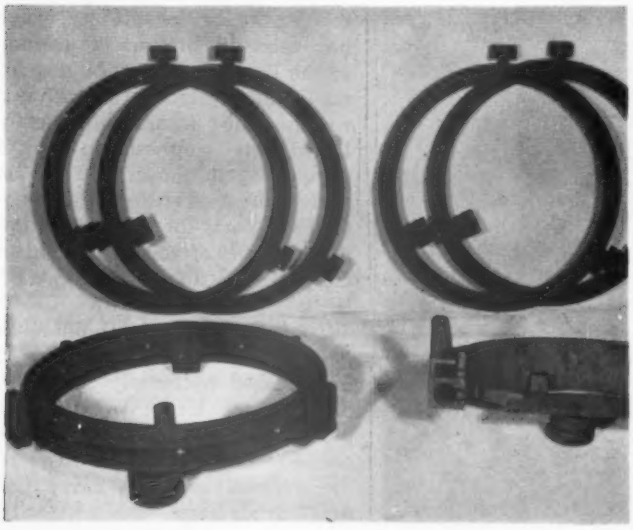
On first order for 250 castings at savings of 59¢ each, or total of $147.50, the pattern cost was more than paid for immediately.

Savings from change in material: A switch from gray iron to an abrasion-resistant high alloy boosted the price of this casting for a chain drive from $.88 to $2.66 a pair. But the new material has already held up almost three times as long as the old.



	CASTING #1	CASTING #2
MATERIAL:	Gray Iron	Abrasion Resistant Alloy
NUMBER OF CASTINGS USED PER CHAIN DRIVE:	150 pairs	150 pairs
PRICE OF CASTINGS: (150 pairs)	$0.88 ea. pr. $132.00	$2.66 ea. pr. $399.00
LIFE OF CASTINGS:	Less than 2 yrs.	Still in use after 3 yrs.
MAN HOURS USED TO CHANGE CASTINGS: (150 pairs)	1200 man hours	1200 man hours

With three times the life, the $267.00 additional expense for the castings is more than offset by the savings in 2400 man hours.



Savings from service: This large and intricate burner casting was needed on a seasonal basis. After a month of production, one foundry was unable to meet normal requirements. Another foundry experimented with the casting, regated it, and was able to produce 20 units a day. Customer avoided considerable loss on other materials purchased and assembled waiting for delivery of burners.

Situation: - Needed 300 burners for delivery August through November.

	Foundry #1	Foundry #2
PRICE:	$9.80 ea.	$12.00 ea.
GOOD CASTINGS DELIVERED AFTER QUOTATION:	In 24 days 5 castings	Following first foundry failure; 20 per day, produced after 5 days of experimentation.
EXTRA COSTS:	Welding of mis-runs and chaplet holes.	None

How Lewyt Handles the

By John Van de Water

Lewyt Manager of Purchasing Alter Hurwitz has found that by knowing production needs it is possible to combine on-time performance with profitable buying.

When specifications for a job have been completed by engineering, bills of materials and requisitions are run off at the same time.

The material control group breaks down bills of materials and consolidates duplicate items on one requisition. Material control sheets and requisition cards on table represent only part of one contract.

"THE PURCHASING manager must be production minded. Only if he knows production's needs can he do a really good purchasing job."

This approach enables Alter Hurwitz and his small department to do a big purchasing job for the Lewyt companies in Long Island City, N.Y. As manager of purchasing, Hurwitz, with one purchasing agent and two buyers, places orders for more than $20 million worth of materials annually. He also has two assistant buyers and two expediters who keep track of the 60,000 purchase orders issued each year and maintain the tie-in-with production.

To handle this volume Hurwitz depends on:

- Advance requisitions
- Thorough knowledge of vendor sources
- Complete records of previous purchases
- A good inventory and material control system
- Careful expediting

High Pressure Purchasing

Purchasing buys for two companies: the Lewyt Corporation, maker of the Lewyt vacuum cleaner; and the Lewyt Manufacturing Corporation, builder of electronic and electro-mechanical equipment for the military which has recently become a division of the Budd Co. Since buying for the vacuum cleaner company is routine once a model is established, the emphasis in Lewyt purchasing is almost entirely on procurement of electrical and mechanical parts for military equipment. Much of this is for Signal Corps installations such as SAGE. It's a fiercely competitive field.

To be a successful bidder—as Lewyt so often is—costs have to be watched extremely carefully. This puts a lot of pressure on purchasing. And adding to the pressure is the fact that many of the defense contracts carry liquidated damage clauses, with

Small-Staff, Large-Volume Problem

penalties totaling thousands of dollars if schedules aren't met. This makes expediting a priority operation in Lewyt purchasing.

To operate under such difficult conditions, Hurwitz has to scramble to get as much buying time as possible. In line with this, he regularly issues lists of long lead-time items. The lists go to production and engineering so that they will be able to schedule purchased materials with the maximum possible lead time.

As soon as a new contract is started, and well before detailed specifications are ready, Hurwitz receives a list of major items to be purchased. He then contacts vendors and gets preliminary quotations based on temporary specifications and blueprints. Although he cannot make a final commitment at that time he is able to lay the groundwork and gets a pretty good idea which vendor will be able to do the best job at the best price.

Following the preliminary specs "advance" requisitions on the long lead time items are made out by engineering before formal bills of material are ready. These advance requisitions give purchasing all the information it needs to place firm orders.

By the time the "final" requisitions reach purchasing, most of the complex and difficult components are already on order. Standard parts and others available on short notice are all that remain.

Investigate Vendors

Vendor selection is, of course, extremely important for Lewyt. Suppliers who have already done work for the company and have been approved by the military do not have to be checked out. However, to keep costs down, Hurwitz is constantly on the lookout for new suppliers who can do quality work at a lower price. New vendors get a very thorough investigation. It's time consuming—often involves plant inspections—but Hurwitz finds it is worth the effort.

Lewyt is protected in dealing with new vendors because samples or prototypes have to be submitted and a purchase order can be cancelled if the samples are not approved. Although no formal vendor rating system is used by purchasing, it gets quality control and inspection reports from the plant.

Has Information Inventory

To find sources for thousands of special components, Hurwitz has to have excellent purchase information files. A complete record is kept of all previous purchases. This information is filed by type of item and includes part specifications, source, price, quantity and date bought. Although few special components are exact duplicates, there is sufficient similarity to make this information extremely valuable.

This information "inventory" as Hurwitz calls it, also permits purchasing to supply reasonably accurate price information for bidding purposes. By the time Lewyt makes a proposal 95% of the purchased items have been priced by the purchasing department. For parts where no price information is available, estimates are made. "Engineering used to do the price estimating" says Hurwitz, "but they tended to be pretty far off. Now I sit down with them and we guess together."

Hurwitz' close tie-in with production helps this group maintain the inventory and material control system upon which he depends to simplify his purchasing.

Bills of material for large contracts may run into hundreds of pages with as many as 5000 purchased items required. Requisitions are run off simultaneously with the bills of material. These are broken down further by a material control section which also consolidates duplicate items into single requisitions. Shrinkage experience is added, inventory control notes the stocks on hand and on order, and production scheduling adds the required dates.

For Hurwitz, keeping in touch with production is a two-way street. He not only keeps abreast of the major contracts—"I know the status of every job in the plant," he says—but makes sure that all purchase orders are expedited to the required production schedule.

Each of the expediters handles one or two major jobs and a few smaller contracts. They post receiving information themselves to keep up with deliveries. Follow-up is done automatically at a given time before the material is due. Shortage sheets from production keep the expediter on his toes when the requirement date comes closer.

"Mechanical components need little expediting," explains Hurwitz. "Most of them are standard. But electrical items need careful watching. On long-cycle items, where partial shipments are made at regular intervals, we find that the vendor is dependable once you get him started, but you got to make sure that he comes through on time with the first shipment."

On the really tough expediting jobs Hurwitz visits the vendor himself. "You can no longer call that expediting," he says. "It becomes a matter of whom you know—people you have worked with or met socially." He recalls one instance where a personal contact enabled him to reduce a six-month delivery promise to one week.

Hurwitz keeps up his contacts among purchasing people as well as with vendors. He is a member both of the New York Purchasing Agents Association and of the independent Purchasing Agents of the Radio, Television and Electronic Industry. The latter group chose him P.A. of the Month of February 1958.

THE PROBLEM: CUT NEEDLESS cost from a fuze holder. The Value Analysis Group Leader shows the part and challenges team members to come up with ideas to get a better product at a lower price.

ANALYSTS ARE GIVEN FREE REIN, encouraged to speak up on even the wildest ideas on changes in design, materials, etc. Preliminary sketches are often transferred to the blackboard for discussion.

Value Analysis Cuts Cost of Army Rockets

The military has adopted one of industry's most effective cost-reduction weapons with great success. At Redstone Arsenal "brainstorming for value" will save taxpayers close to a million

A RESTLESS crew of question-askers is now stirring around in the middle of the Army's rocket programs.

The unit was formed only six months ago and given a simple mission. "Rockets cost a lot, so let's cut costs," the members were told by Capt. Merle Ashley who heads the program.

Already the government and the taxpayers are receiving dividends from the group, which is officially known as the Value Analysis Office of the Army Rocket Guided Missile Agency Industrial Division. ARGMA, is the production and procurement arm of the Army Ordnance missile command. Its value analysis group is one of several the armed services have established at various installations throughout the country.

In the short time the unit has been at work it has rung up savings close to a quarter of a million dollars. It expects to add at least another million to that total before the end of the year.

Here are some examples of savings that have come out of its brainstorming sessions:

- Substitution of a standard sling for a special on a missile booster will save $52,000 in a year;
- Simplification of a handle bracket on a rocket container saved $10,000;
- A switch from kiln-dried wooden skids to air-dried skids saved $30,000.

Pressure Is On Industry

Members of the value analysis staff know that in today's telescope rocket programs no single firm can develop and produce a complicated missile system complete with all refinements.

"Modern weapons are developed under great pressure and industry is required to roll them off the production lines in the shortest time feasible," according to Colonel Henry H. Wishart, chief of the far-flung Industrial Division.

"Developing, producing and fielding modern weapons in the shortest time at least cost demands a constant wringing out of cost without affecting quality. This takes sweat, persistence and imagination."

It's the latter ingredients that the value analysis brainstormers supply in their regular sessions.

Where does an idea come from?

"Sometimes it comes sweeping in from a private mental cyclone," Capt. Ashley admits. "Sometimes it takes prolonged and organized assault to break loose a good idea.

"Most of all", he says, "we ask questions. Without inpugning anybody's product, we must question everything. That's our job.

"The fact that we have been asked to make sure that the government gets the most out of every dollar is not a reflection on anybody in industry," he insists. It means what we all know but sometimes won't admit: no matter how well you do a job, there's always a better and less expensive way to do it."

AN IDEA MUST BE thoroughly discussed, analyzed and agreed on at regular staff sessions. After the value analysis group has approved it, the idea is presented to engineers and contractors.

Chief brainstormer Austen Couch is as quick to point out that the existence of the value analysis group in no way reflects on the technical personnel responsible for the Army's rockets. "Designers and engineers have a built-in fear of failure", he says. We expect it in them. All their life, in school and since, they have been taught fear of failure. Their job is to come up with a rocket that shoots straight and hits the target. Naturally, to ward off failure, they use the very finest materials and most reliable processes known to them."

"Sometimes only the best material will do the job," Couch says. "If a gold plated tail fin is the only thing that will work when a new missile is designed, well okay. But that doesn't mean you have to use gold plate forever, if something else will do just as well at lower cost."

The Value Analysis Office occupies a big room filled with a few desks and tables near AOMC Headquarters at Redstone Arsenal, Alabama. The team meets regularly for organized brainstorming sessions, and occasionally in groups of two or three as the progress of various projects demands. Couch will present a problem to them and try to pick their brains.

Only a few days ago Couch stood before the blackboard and outlined a simple problem.

For some reason (maybe a very good one; they don't know yet), an expensive, machined gadget had been designed to hold spare fuzes.

"The only fuze holder I ever heard of is the one under the dashboard of my automobile that holds an extra fuze," Couch told the group around the table.

"The particular fuze holder is for use in an electronics van and for maintenance reasons it has to hold 37 fuzes. But does it have to cost a lot?"

Couch passed on the problem to a group of relaxed men and women, military and civilian, officers and enlisted men, all sitting around a big table in a quiet room. Coffee was on the house.

Couch challenged them:

"We've got an electronics van. On the wall is a gadget that holds 37 fuzes. It has to hold 37 fuzes as a back-up to any conceivable emergency repairs. The gadget has to be good, but does it have to be made of expensive metals, that is, machined to close tolerances?

"What's your solution?"

The answers, as they always do, came a little slow at first, then everybody around the table got into the act. They could hardly wait to speak up, or run up to the blackboard with a piece of chalk.

The brainstormers didn't reach a final decision that afternoon about those 37 fuzes. But they spouted ideas ranging from to "put 'em in a box," to "stick 'em on the wall with adhesive", to "what's wrong with a plastic holder?" As usual, out of the welter of ideas, will come a workable, economical solution that will satisfy everybody . . . that is, until value analysis takes another look at it.

Analysts Must Sell Ideas

But the analysts don't spend all their time in the office. Much of it is spent on the road. They're often out on production lines, visiting suppliers and other Army plants, selling new cost-saving ideas they've developed in their formal sessions.

"In our trips around the country," Capt. Ashley says, "we try to persuade. What we try to do as production specialists is to hand over an idea that has been knocked around, turned inside out, and orbited over the lot—and still holds up. When an idea comes out of that process and still looks like a surefire money-saver how can anyone turn it down? They can't."

One contractor had designed and was producing a lifting ring attached to a missile container. To make the ring, special tools and materials were required. It was a good lifting ring. The only hitch was that there were already a hundred rings on the market that would do the same thing for less money, including one ring used by a casket maker.

In another plant, the yoke used to handle a rocket was simplified, at the suggestion of the Value Analysis Office, saving some $26,000.

In the case of materials again, some manufacturers from force of habit, might design a highly-machined, many-threaded missile component made of brass. But by taking another look, they find the same item can be made of less costly material, with much wider tolerances, and fewer threads . . . and still do the job.

"A lot of savings can be made in processing materials," Ashley points out. "Metal can be stamped, forged, cast, extruded, rolled, spun, poured, plated and splashed. It doesn't have to be hand-machined in an air-conditioned shop on a 20-ton lathe."

(*Please turn to page* 136)

When Are Suppliers Guilty Of Breaking Antitrust Laws?

By Albert Woodruff Gray

FROM CHARGES of antitrust violations made before a federal court by the purchaser of plastic material, a manufacturer of chemical products asked that references to the price structure of the basic ingredient of this plastic material be stricken from the controversy.

The chemical manufacturer maintained that the plastic producer had never dealt in this basic ingredient and that it in no way featured in his complaint.

In the action however, it had been alleged that the chemical manufacturer in the production and sale of acrylic sheet, had violated the federal antitrust laws. Since 1950, it was asserted, this chemical manufacturer had produced and sold approximately 70% of acrylic sheet ingredients and the remaining 30% of the market had been sold by another chemical manufacturer.

The only other producers of this ingredient were an English and a German firm who exported very little of the chemical. By 1953 the U. S. manufacturer of this chemical was producing 80% of the nation's supply. More recently it has been the source of 99% of the country's production.

Forced Out of Competition

The plastic producer contended that it had been forced out of competition in the acrylic sheet field by the manufacturer. It based this claim on one of two reasons:

(1) The price of the major ingredient from which this competitive product, acrylic sheet, is produced, had been maintained by the manufacturer at an artificially high level by keeping the price of the basic ingredient high. Or (2): The price of the product had been kept at an artificially low level and the basic ingredient at a considerably higher level.

The chemical manufacturer contended that references to the ingredient should be stricken out on the ground that the complaining competitor had never purchased, used or sold the product or attempted to do so.

"The contention," said the court in its denial of this application, "that all reference to this chemical ingredient was irrelevant fails to give credit to the structure of the charge. One of the central links is the fact that the company charges itself less for this basic ingredient from which the cast sheet is manufactured, than it charges other manufacturers."

There is an interesting contrast in this action, in which the market of this essential ingredient is substantially under the control of the manufacturer, and the action involving the cellophane market recently before the United States Supreme Court.

In the cellophane case, the federal government charged a manufacturer "with monopolizing or attempting to monopolize commerce in cellophane and cellulosic caps and bands."

What Is a Monopoly?

In its acquittal of the cellophane manufacturer of violations of the antimonopoly laws, the Supreme Court introduced into the controversy what is bound to be a determining factor in future instances of this character.

Difficulties of interpretation have arisen in the application of the Sherman Act, the court asserted in its decision, in view of the technical changes in the production of commodities and the new distribution practices. Of the Sherman Antitrust Act itself, the court said that the only statutory language pertinent to this situation was that, "Every person who shall monopolize * * * shall be deemed guilty * * *."

"You're right! We do have high prices—poor deliveries—and a monopoly!!"

It has been pointed out, the court continued, that monopoly is a grant by the sovereign to any person for the sale, making or handling of anything so that others were restrained or hindered in their lawful trade. Here, as in England, it came to be recognized that acts bringing the evils of authorized monopoly—unduly diminishing competition and enhancing prices—were undesirable and were declared illegal.

Our cases determine that a party has monopoly power if it has over "any part of the trade or commerce among the several states" a power of controlling prices or unreasonably restricting competition.

The court added that where there are market alternatives that buyers may readily use for their purposes, illegal monopoly does not exist, merely because the product said to be monopolized differs from others.

If it were not so only physically identical products would be a part of the market. The varying circumstances of each case determine the result. In construing what is a relevant market for determining the control of price and competition, no more definite rule can be declared than that commodities reasonably interchangeable by consumers for the same purpose make up that part of the trade of commerce, monopolization of which may be illegal.

"Industry activities cannot be confined to trim categories. Illegal monopolies under the statute," said the court, "may well exist over limited products in narrow fields where competition is limited. In determining the market under the Sherman Act it is the use or uses to which the commodity is put that control.

"The selling price between commodities with similar uses and different characteristics may vary so that the cheaper product can drive out the more expensive. Or the superior quality of higher priced articles may make them the more desirable."

In its conclusion to this interpretation of the antitrust statute there was added the comment, "The 'market' which one must study to determine when the producer has monopoly power, will vary with the part of commerce under consideration. The tests are constant. That market is composed of products that have reasonable interchangeability for the purposes for which they are produced—price, use and qualities considered.

"While the application of the tests remains uncertain, it seems to us that this manufacturer should not be found to monopolize cellophane when that product has the competition and interchangeability with other wrappings."

How Cases Differed

In this case there were substitutes for cellophane wrappings. But in the suit involving the price squeeze on acrylic sheet ingredient, there was no substitute. Of its source, 99% in this country was controlled and owned by one manufacturer.

In its defense, the chemical company argued that the charges made were futile without an unlawful monopoly of the basic ingredient.

To this assertion of the manufacturer the court's reply was that this incident was "on all fours" with the famous action of the United States against the Aluminum Company of America.

During the early years of this century Alcoa was the sole producer of virgin ingot aluminum in the United States. In 1912 the output of this product by "Alcoa" was 91% of the total of virgin ingot available for sale in the United States. During the next twenty five years the average proportion was over 80% and for the period from 1934 to 1938, 90%.

Of the effect of a monopoly of this sort and of a salvageable product, the federal appellate court said, "In the case of a monopoly of any commodity which does not disappear in use and which can be salvaged the supply seeking sale at any moment will be made up of two components: (1) the part which the putative monopolist can immediately produce and sell: and (2) the part which has been or can be reclaimed out of what he has produced and sold in the past.

"By hypothesis he presently controls the first of these components; the second he has controlled in the past although he no longer does. During the period when he did control the second, if he was aware of his interest, he was guided, not alone by its effect at that time on the market, but by his knowledge that some part of it was likely to be reclaimed and seek future market. That consideration will to some extent always affect his production.

"Thus in the case at bar Alcoa always knew that the future supply of ingot would be made up in part of what it produced at the time and, if it was as farsighted as it proclaims itself, that consideration must have had its share in determining how much to produce.

"How accurately it could forecast the effect of present production upon the future market is another matter. Experience no doubt would help. But it makes no difference that it had to guess. It is enough that it had an inducement to make the best guess it could and that it would regulate that part of the future supply so far as it should turn out it had guessed right."

This secondary feature of competition, the salvageable material, the court pointed out, was as much within this company's control as was the production of the virgin aluminum ingots themselves.

The Government's Claim

The government's claim was that Alcoa had consistently sold aluminum ingot at so high a price that the sheet rollers who were forced to buy from it could not

(Please turn to page 138)

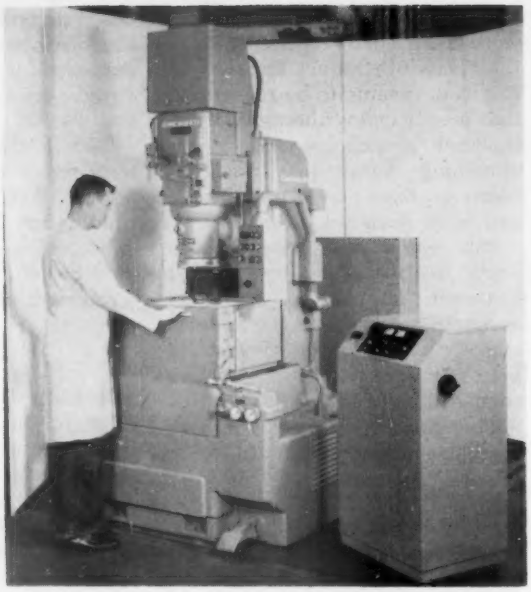
REFERENCES

Sandee Mfg. Co. v. Rohm & Haas Co., 1959 Trade Cases 69,318 (C.C.H.) March 20, 1959

United States v. E. I. du Pont de Nemours & Co., 351 U.S. 377, June 11, 1956

United States v. Aluminum Co. of America, 148 Fed. 2d 416, March 12, 1945

New Metal Working Tools "Machine" With Electric Sparks



Electrospark diesinking is practically noiseless. Both part and electrode are submerged in an oil bath.

A LINE of machine tools specifically designed for electrical discharge machining has been announced by the Cincinnati Milling Machine Company. The new Electrojet line consists of 33 tools which can be built up from 16 basic units, many of which are completely interchangeable.

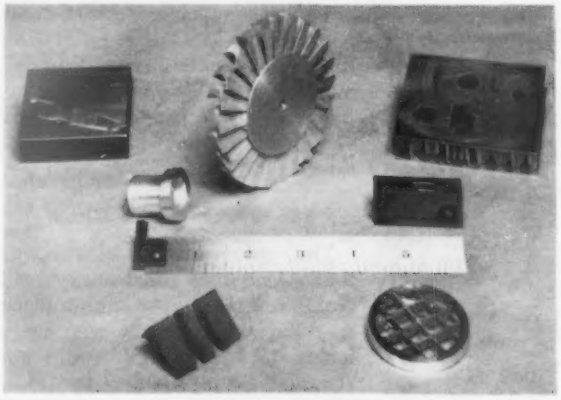
Electrical discharge—or electrospark—machining is based on the eroding effect of high-energy sparks on metal. When these sparks are made to jump between an electrode and the workpiece under controlled conditions, the shape of the electrode is duplicated in the workpiece. The electrode surface also wears away but at a much lower rate. Depending on the nature of the work, sparks occur at rates from 10,000 to 250,000 times per second. To achieve rapid quenching and to wash away the debris, the machining is done submerged in a tank filled with a dielectric fluid.

The manufacturer states its machines are not intended to supersede conventional diesinking equipment but are especially suited to shape materials that are too hard or too brittle to machine by any other means. The new method also opens up the field for producing holes with other than circular cross sections and is well-suited for those jobs where the distortion, burring, or differential heating caused by conventional machining is a problem.

The basic Electrojet line consists of a single base and column on which four interchangeable workheads and four different base-tank units may be mounted. The choices of workheads are:

- Non-rotating—for operations such as die sinking in which the desired shape is produced by the vertical feed of a formed electrode
- Rotating—for circular applications at an increased rate of stock removal; spindle rotation can be stopped and quill feed used alone.
- Universal—eccentric or planetary rotation of the spindle is possible in addition to quill feed and rotation.
- Ram-type—for extra large plunging cuts where the cavity has a large surface area.

Each of these workheads may be matched with any of four tanks for holding the dielectric fluid. Power supplies of 20, 40, 60 and 100 amps are available. The line also includes two electrospark grinding machines and a heavy-duty diesinking machine for work on blocks up to 18″ thick.



A sample of some typical parts machined by electrical discharge tools.

the SAGINAW b/b SCREW helps

Double Ditch Witch Sales in One Year!

"We've replaced an acme screw with a Saginaw Ball Bearing Screw to enable the digging boom of our Ditch Witch Trench Digging machine to be raised and lowered three times faster. It makes the operator's job twice as easy. And the Saginaw Screw saves us money both in first cost and greatly reduced maintenance. Since using the Saginaw Screw we've actually had to DOUBLE plant capacity to keep up with a two-fold increase in sales *this* year, and handle an expected increase of the same size *next* year!" *says Howard Worthington, Sales Manager, Charles Machine Works, Inc., Perry, Oklahoma.*

No wonder the Saginaw Screw adds a heap of *extra* Sales Appeal to the Ditch Witch! The Saginaw Ball Bearing Screw *converts rotary motion into linear motion with over 90% efficiency.* You, too, can save time, power, weight, space and cost by switching from outdated actuators to these versatile, always reliable Saginaw Screws.

Perhaps the Saginaw Screw can give *your* products that greater **S**ales **A**ppeal you're looking for. Interested in details? Write or telephone Saginaw Steering Gear Division, General Motors Corporation, Saginaw, Michigan —*world's largest producers of b/b screws and splines.*

The Saginaw b/b Screw adjusts digging depth of the Ditch Witch Trencher three times faster and twice as easily.

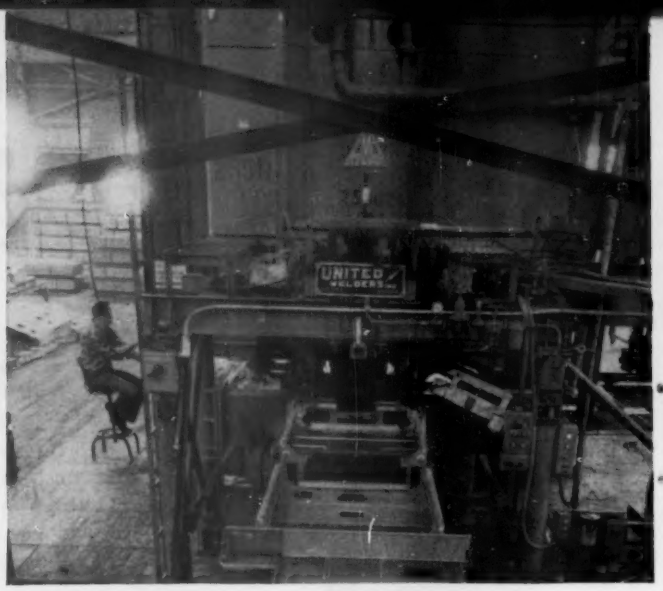
Give your products NEW SALES APPEAL... switch to the **Saginaw**

ball bearing Screw

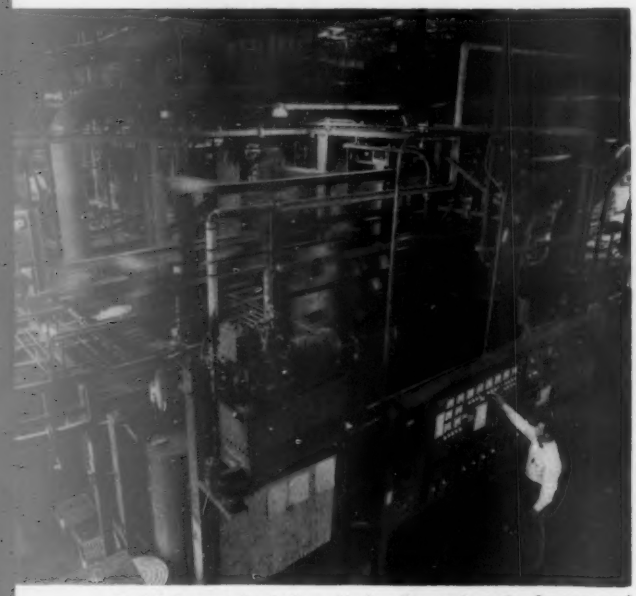
'WORLD'S MOST EFFICIENT ACTUATION DEVICE

For More Information about ad on following page Write No. 204 on Inquiry Card—pg. 32→

1. **Initial stamping.** This 850-ton press in the range plant at GE's Appliance Park, turns out range bodies (flat) at the rate of 300 an hour. Used in the press are Gulfcrown® Grease, a Gulf E.P. Lubricant and Gulf Harmony® oil.



2. **Welding and forming.** After leaving the press, the flats are assembled in an automatic welder-former (background) and proceed on a fully automated line that has over 400 lubrication points, all serviced with six Gulf lubricants.



5. **High speed plating.** Hydraulic system in foreground provides power to move plated components (such as broiler trays) through plating tanks. Gulf Harmony is the power medium in this and other such plant systems.

6. **Completed ranges.** Operator tests a removable oven door on a GE range moving along the free standing assembly line. More than 1,600 of these units are turned out daily at GE's Appliance Park.

Large electric range plant meets complex lubrication

GULF MAKES THINGS

"We turn out more than 1,600 ranges a day in a highly mechanical plant that has thousands of lubrication points. Up until 4 years ago we had the problem of too many lubricants—dozens of them—that had been purchased for specific machines and applications. Each served its purpose well, but handling was complicated.

"A Gulf Engineer—after a comprehensive survey of our lubrication problems—helped us reduce our plant lubricants from dozens down to a total of only six Gulf oils and greases—and helped us set up lubrication schedules that pay off in greater efficiency."

That's the word from W. G. Montgomery, Superintendent of Building, Tools and Equipment in the Range Department of General Electric's huge Appliance Park near Louisville, Kentucky.

Shown above are a few of the highlights in the automated forming and assembly line at the General Electric range plant—where all lubrication needs are met by

3. Automated conveying. 12 miles of conveyors move range bodies automatically. Gulfcrown Grease lubricates conveyor bearings. Gulf Harmony oils are used on chains and sprockets. Gulf E.P. Lubricants on speed reducers.

4. Heat processing. Conveyors take range components past batteries of heat lamps. A special heat-resistant Gulf grease lubricates and protects the free roll bearings. Gulf makes things run better—even when the "heat's on."

7. Scientific lubrication. Three oilers, using the same six Gulf lubricants, service entire automated production line. Daily lubrication is done on second shift. Hydraulic systems are changed yearly during summer shutdown.

8. Gulf man on the job checks with GE man on advantages of simplified lubrication plan. Left, W. G. Montgomery, Superintendent of Building, Tools and Equipment, Range Department. Right, Earl Straub, Gulf Sales Engineer.

demands with six Gulf lubricants . . .

RUN BETTER!

only six basic lubricants recommended by Gulf. With this simplified lubrication plan, this plant not only frees personnel for other work, but reduces both lubricant inventory and purchase costs.

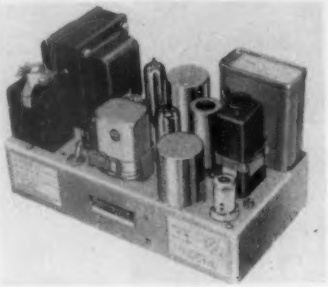
Simplify your plant lubrication with the built-in versatility of Gulf quality lubricants. See how Gulf makes things run better. Just call a Gulf Sales Engineer at your Gulf office. Or, write for bulletins on Gulf Harmony oils, Gulf E.P. Lubricants and Gulfcrown Grease.

GULF OIL CORPORATION
Dept. DM, Gulf Building
Pittsburgh 30, Pa.

GULF

Products

Amplifier Combines Sensitivity and Stability



A new compact electronic relay control amplifier combines sensitivity of 1 microvolt and stability of plus or minus 1 microvolt. Used principally for industrial process control and monitor systems, amplifier performs excellently as a component in instruments of laboratory accuracy, even where electrical interference, extreme variations in power supply, and high external input resistance are present. Operating power supply is 115 volts, plus or minus 10, 50 to 60 cps. Weight is 6-½ lbs, and dimensions are 4-½ x 3-¾ x 6 in. **Thermo Electric Co., Inc., Saddle Brook, N. J.**

Write No. 18 on Inquiry Card—Page 32

Heavy-Duty Drills for Super Alloys

New heavy-duty jobbers length drills are designed for drilling aircraft and missile super alloys and high strength steels. They work efficiently at high temperatures and can be used with either stationery or portable drilling units. Drills are made from 8% cobalt high speed steel with a high vanadium content. Their short flutes give maximum rigidity, and special point design provides good penetration and thrust reduction. **National Twist Drill & Tool Co., Rochester, Mich.**

Write No. 19 on Inquiry Card—Page 32

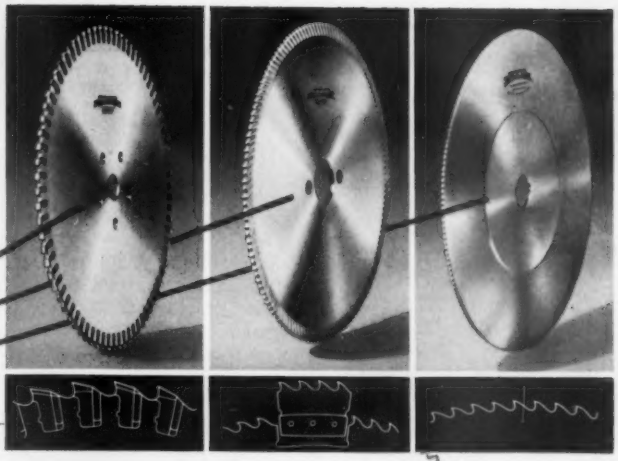
*Do you cut **ferrous** metals? If so, Simonds has three basic saw designs for you:*

INSERTED TOOTH METAL SAWS

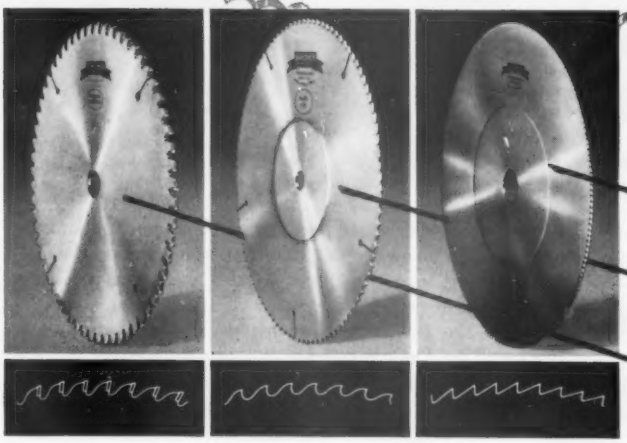
SEGMENTAL SAWS

SOLID TYPE SAWS

Available in High Speed and Semi-High Speed Steels



There's a SIMONDS Circular Saw Exactly Right for Your Metal Cutting Job



*If you're cutting **non-ferrous** metals, Simonds offers you:*

SOLID STEEL SAWS
Available in "Si-Maloy", in High-Speed Steel for cutting where extreme abrasiveness is present, and in Semi-High Speed Steel.

HIGH SPEED STEEL, HARD RIM SAWS
Hard cutting edge, soft center gives you long life coupled with safety.

CARBIDE TIPPED SAWS
for cutting aluminum and magnesium, as well as other non-ferrous metals

No matter what kind of metal you're working, there's a quality Simonds blade just right — a blade that means faster, cleaner cuts, longer blade life and maximum performance.

Find out how a Simonds Circular Metal Cutting Saw can mean important savings for you.

For Fast Service from Complete Stocks Call your SIMONDS Industrial Supply DISTRIBUTOR

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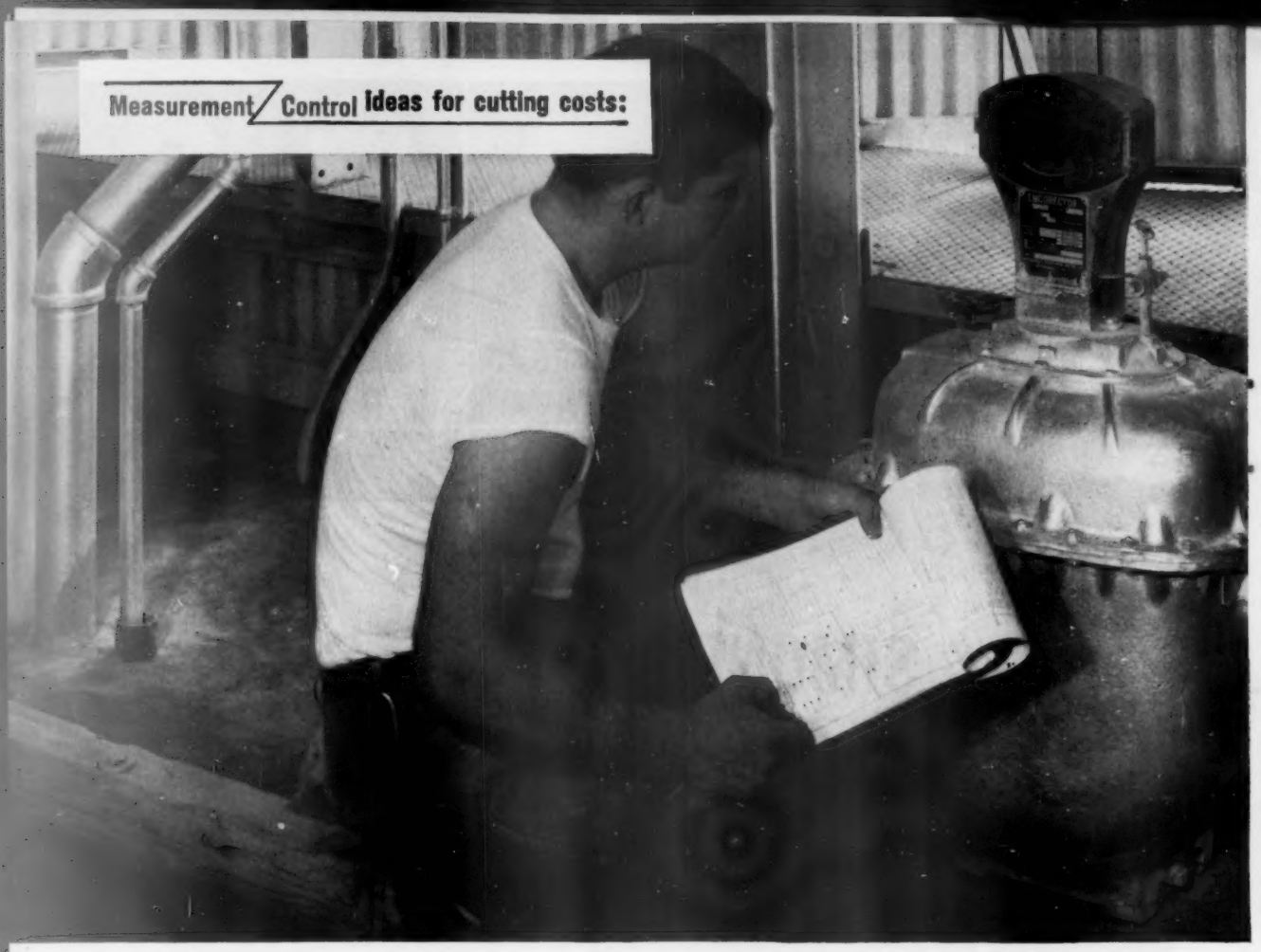
Factory Branches in Boston, Chicago, Meridian, Miss., Shreveport, La., San Francisco and Portland, Ore., Canadian Factory in Montreal, Que., Simonds Divisions: Simonds Steel Mill, Lockport, N. Y., Heller Tool Co., Newcomerstown, Ohio, Simonds Abrasive Co., Phila., Pa., and Arvida, Que.

For More Information Write No. 206 on Inquiry Card—Page 32

For More Information about ad on following page Write No. 207 on Inquiry Card—pg. 32→



Couldn't "in-plant metering" HELP YOU CUT COSTS TOO?

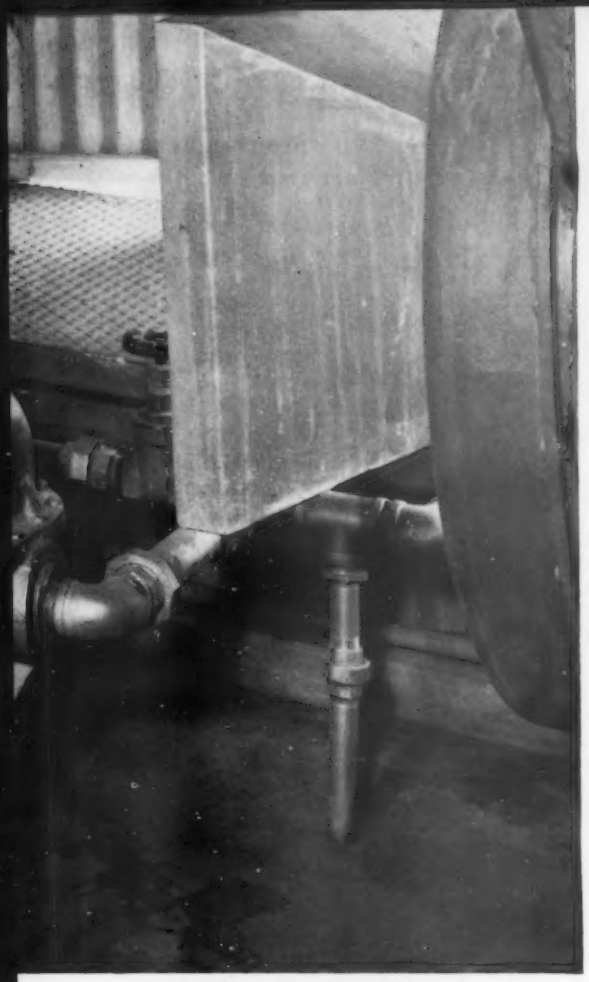
Wherever things flow through pipe in your plant—whether as fuel, aids to production, or finished products—chances are that in-plant metering will be an immediately profitable investment. For example: above, you see Rockwell gas meters installed on individual enameling furnaces. The meters were recommended by a Rockwell field engineer as a fast, easy way of spotting furnace inefficiencies and preventing fuel wastage. Also, accurate fuel cost records of each operation were available for the first time—Cost Accounting Department figures were made more revealing.

In a bottling plant, another Rockwell field engineer recommended water meters to prove amounts of water actually bottled with product. The result: a sizable reduction in a sewage tax based on the premise that all water going into the plant would be discharged into the sewage system.

These are just a few examples of the many ways Rockwell field engineers are helping save time, money and material in a wide variety of manufacturing and process plants. These field men represent Rockwell's experience as the world's largest manufacturer of measurement and control products. Why not have a Rockwell field engineer visit your plant to explore new approaches to cost cutting through improved measurement and control? Send the coupon—there is no obligation.

ROCKWELL

The leading single source for Measurement/Control products and ideas



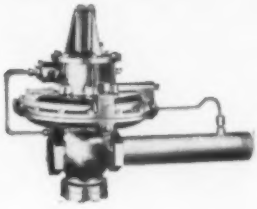
"IN-PLANT" METERING:

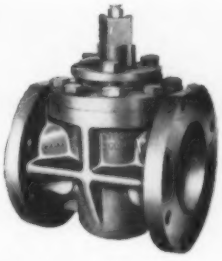
LIQUIDS AND GASES

"IN-PLANT" METERING can mean new cost cutting opportunities. Accurate liquid and gas meters are a positive way of improving cost control, insuring better use of materials, sharpening inventory control, and preventing waste. Whatever the need, Rockwell has the right liquid or gas meter to do the job better and at lower cost.

CONTROLLING PIPED MATERIAL:

LIQUIDS AND GASES





CONTROLLING PIPED MATERIAL more efficiently is a positive step towards cost cutting. Better valves can save wasted products and materials and often increase plant safety. Gas pressure regulators can cut costs by assuring safe, economical use of any gas used in the plant. Rockwell has the world's most complete line of flow control devices.

HOW MUCH COULD YOU SAVE?

There is hardly a plant of any kind—including yours—where the right application of the right measurement and control methods and equipment won't produce savings many times the modest cost involved. It will cost you nothing to have a Rockwell Field Engineer *show* you. Simply send the coupon below, now.

SEND COUPON NOW!

MEASUREMENT & CONTROL DEVICES

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Rockwell Manufacturing Company, Pittsburgh 8, Pa. Dept. MC3K

☐ Please have a Rockwell Field Engineer call me for an appointment.

Please send literature on ☐ Controlling gas pressures; ☐ Valving gases, liquids and slurries; ☐ Measuring liquids; ☐ Measuring gases.

I am concerned primarily with ☐ Light & Heavy Metal Fabricating ☐ Basic Chemical Production ☐ Chemical Processing ☐ Food, Drugs & Tobacco ☐ General Manufacturing Operations ☐ Petroleum Processing

☐ Others: _____

Name: _____ Title: _____

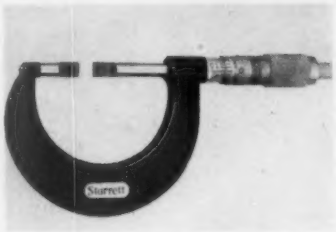
Company: _____

Address: _____

City: _____ Zone: ____ State: _____

Products

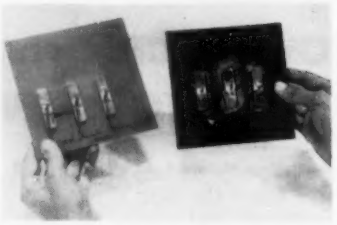
Blade-Type Micrometers for Narrow Spaces



Micrometer calipers with blade-type anvils and spindles facilitate measuring depths of narrow grooves, slots, keyways or recesses and for measuring diameters between lands, fins or ridges, etc. Blade-type anvil and spindle is only .030 in. thick and will measure depths up to 5/16 in. Spindle is non-rotating and will not turn in slot or roll off a narrow shoulder. Available in five size ranges—0-1 in., 1-2 in., 1-½-2-½ in., 2-½-3-½ in., and 3-½-4 in.—graduated to read in thousandths of an inch. **L. S. Starrett Co., Athol, Mass.**

Write No. 20 on Inquiry Card—Page 32

Track-Resistant Laminate for Adverse Conditions



A new track-resistant insulation is intended for service in contaminated, humid atmospheres. Fiber glass polyester laminate offers distinct advantages in apparatus operating at voltage over 1 kv or applications with short creep distances. Flame-retardant as well as track-resistant, material is conservatively rated with 200-hour value. Laminate is available in standard sheet sizes of 24 x 36 in. and 36 x 72 in., in thicknesses of 1/8 through 3/4 in. **Glastic Corp., 4321 Glenridge Road, Cleveland 21, Ohio.**

Write No. 21 on Inquiry Card—Page 32

For More Information about ad on following page Write No. 209 on Inquiry Card—pg. 32→

Crucible stainless highlights the quality in your product

This is because Crucible precision-rolls stainless to produce finishes of incomparable lustre. Not only that, Crucible methodically checks each heat to ensure uniform physical properties and accurately controls gauge with electronic measuring devices. For stainless in all gauges down to .010" and in all strip widths, call or write: Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.

CRUCIBLE STEEL COMPANY OF AMERICA

CANADIAN DISTRIBUTOR — RAILWAY AND POWER ENGINEERING CORP., LTD.

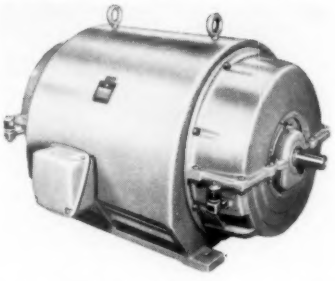
Products

Pre-Tested Capacitors with Certified Reliability

A new tantalum capacitor carries with it a written certification of reliability. Manufactured to meet the most exacting specifications, each capacitor is given a permanent registration number, and test data sheets give proof of pre-tested reliability. Capacitor is a polarized, tantalum electrolytic unit capable of operating at full rated voltage in temperatures ranging from minus 55 degrees C to plus 85 degrees C with voltage derating at ambient temperatures from 85 degrees C to 124 degrees C. **Fansteel Metallurgical Corp., North Chicago, Ill.**

Write No. 22 on Inquiry Card—Page 32

New Line of Large Induction Motors



A new line of large a-c induction motors in open drip-proof enclosures is now available in ratings from 150 to 2000 hp at 1800 and 3600 rpm. Anti-friction bearings are utilized in slow speed motors, 1200 rpm and below, and for direct-coupled drives. For V-belt, gear or chain and sprocket drives, ball or roller bearings depending on the speed, hp and overhung load on the output shaft. Three-bearing motors with outboard pedestal type bearings are also available. **Louis Allis Co., 427 E. Steward St., Milwaukee 1, Wis.**

Write No. 23 on Inquiry Card—Page 32

WHAT OCCUPIES THE MIND OF A PURCHASING AGENT TODAY...

besides prices and deliveries?

Most of a modern purchasing agent's time is occupied with top level thinking about the efficiency of his company's operations. The key word is HOW.

How to help reduce costs in production, handling materials, maintenance, shipping, packaging.

How to improve the systems used for inventory control, warehousing, communications, interviewing suppliers, keeping records, making contracts.

How to conduct effective value analysis meetings to reduce costs and improve the value of his own company's finished products.

How to assess today's news. *How* to interpret actions of Congress and the administration. *How* to read trends and figure whether prices are going up or down.

Each of these "hows" represents a *method*, and you can take it from us—or if you prefer from the purchasing executive in your own company—that these methods take up the bulk of his time, his thinking.

Because this is true, PURCHASING devotes the bulk of its editorial content to reporting, analyzing and evaluating the methods that help purchasing executives in their constant effort to improve the efficiency of all company operations.

However, the editors of PURCHASING cover three other kinds of information needed by purchasing agents.

price trend information

In modern purchasing you buy at a price . . . but you buy *in* a trend. Whether you buy now or later, how much you buy, depends more on the *trend* than on the spot price.

Day to day prices are quickly obtained from the market and the daily press. Trend information takes longer because basic figures on industrial production, inventories, credit, employment, etc. are reported only once a month by governmental agencies. To meet this important need for trend information, PURCHASING presents trend charts in *Pulse of Business* every other issue.

information from Washington

In a similar way PURCHASING interprets the trends behind spot news. *Washington Report*, a feature of every issue, is interpretive reporting by men experienced in purchasing and at the same time familiar with the sources of the kind of information purchasing men want.

information on products and processes

The modern purchasing executive obviously needs reliable information on new products, improved products, and manufacturing processes that his own company—or his suppliers—may be able to use to advantage. PURCHASING Magazine provides this useful information in every edition, but goes further than a "new product" section. Its editors select and edit this kind of information specifically for the known needs of purchasing agents.

a complete service

Methods — trends — interpretation — products and processes — these are the basic information needs met every-other-Monday by the editors of PURCHASING Magazine. Small wonder that PURCHASING leads on every front — circulation, readership, editorial content, editorial staff, editorial awards . . . or that advertisers find it pays best to reach purchasing agents through the pages of PURCHASING Magazine.

PURCHASING *Magazine*
205 East 42nd Street
New York 17, N. Y.
a Conover-Mast publication
NBP BPA
THE METHODS AND NEWS MAGAZINE FOR INDUSTRIAL BUYERS

VALUE ANALYSIS WORKS IN WELDING, TOO

welded with M&T Murex electrodes

Guarding the nation's treasured Declaration of Independence, Constitution, and Bill of Rights is entrusted to what is probably the world's safest safe. Nightly, it lowers display cases into its interior and locks doors automatically. In its construction, Mosler Safe Company relied on Murex electrodes.

This is one of a whole host of important jobs being done with Murex electrodes. Where there is dependence on the integrity of welds, there is dependence on M&T Murex electrodes . . . on Murex welding machines, too.

Murex electrodes not only offer you a safe buy, but also one of the broadest lines for purchasing convenience and economy. It includes over 1000 types and sizes of arc welding electrodes and wire; stocks and service offices are available in every major manufacturing area. Ask the M&T man for details on how you can help add more value to your products with *Murex* electrodes. Or send for booklet.

M&T **welding products** · plating products
metals · coatings · chemicals
METAL & THERMIT CORPORATION, General Offices: Rahway, New Jersey

For More Information Write No. 212 on Inquiry Card—Page 32

If you're in this area...

MAKE U.S.I. YOUR SOURCE FOR AMMONIA AND SULFURIC ACID

If you are located in the area shown on the map above, a U.S.I. plant is within fast-delivery and convenient-servicing distance of your operation.

A huge plant at Tuscola, Illinois is able and eager to supply all your requirements of these chemicals:

AMMONIA, ANHYDROUS—Commercial and refrigeration grades, in tankcars or tank trucks only.

SULFURIC ACID—All strengths from 60° Baumé to 40% oleum. Also electrolyte grade meeting federal specifications. Tankcars or tank trucks only. Three U.S.I. plants—at DeSoto, Kansas; Dubuque, Iowa; Tuscola, Illinois—produce sulfuric acid.

Remember, too, that Technical Service is more than a catch phrase at U.S.I. For well-informed help on materials and applications, call collect, Heavy Chemical Sales, U.S.I.—New York office—Oxford 7-0700.

U. S. Industrial Chemicals Co.
Heavy Chemicals Sales Dept.
99 Park Avenue, New York 16, N. Y.

Please place me on your list to receive future information on U.S.I. heavy chemicals.

I manufacture _____

I use ☐ Ammonia
☐ Sulfuric Acid

Name _____

Position _____

Company _____

Address _____

City _____ State _____

U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp.
99 Park Ave., New York 16, N. Y.
Branches in principal cities

For More Information Write No. 213 on Inquiry Card—Page 32

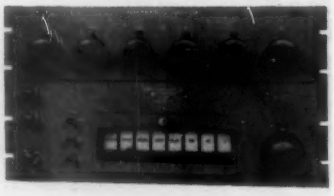
Products

Palletless Handling with New Docker

A new side-shifter and load-holding attachment provides the economy of palletless handling. Accurate spotting of loads on trailer floors or take-it-or-leave-it type pallets, for warehouse storage, is assured with new attachment which permits shifting the load 6 in. each side of center in addition to holding the load in place away from the load. Truck automatically goes into reverse when holding attachment is activated, promoting fast, efficient handling. **Automatic Transportation Co., 149 W. 87th St., Chicago 21, Ill.**

Write No. 24 on Inquiry Card—Page 32

New High Precision Guarded Bridge



A new and improved high precision guarded bridge gives faster and easier operation by merely turning the dials and taking a direct reading from the windows above each dial. Instrument eliminates errors caused by adverse humidity conditions and resulting leakage. New bridge assures accuracy of plus or minus 0.01% up to 1 megohm and plus or minus 0.02% up to 100 megohms. It has a measurement range from 0 to 11,111 megohms, and with it resistors may be tested at full battery potentials up to 100 volts. **Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa.**

Write No. 25 on Inquiry Card—Page 32

For More Information about ad on following page Write No. 215 on Inquiry Card—pg. 32→

Vacu-Break chamber, shown above, smothers arcs at instant of break before they can pit or burn contacts. Dangerous flash explosion occurs at instant of "break" in open knifeblade unit shown below.

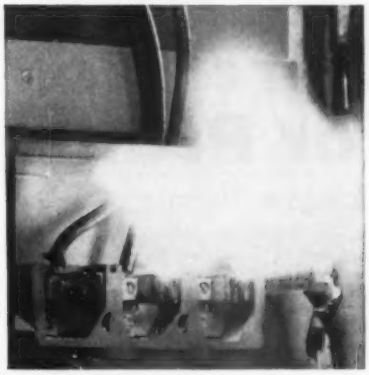
GET VACU-BREAK SAFETY IN
BUS DUCT BY BULLDOG

Plug in extra circuits wherever you need them! And do it with complete safety.

BullDog Plug-in Duct provides openings on 20 inch centers on either side of the duct. To tap "live" power you simply insert Vacu-Break® bus plugs. As the picture shows, reinforced fingers on all plugs insure positive pressure contact. Exclusive Vacu-Break action safeguards circuits and personnel. The enclosed arc chamber limits the oxygen supply . . . actually starves the arc before it can explode and pit or burn contacts. (The Vacu-Break bus plug has six companion plugs to meet other applications.)

Plug-in Duct is powered by Lo-X feeder duct—together they form Bull-Dog's integrated BUStribution® system. Both ducts are available in standardized and interchangeable straight sections, elbows, tees and crosses . . . can be installed sideways, on edge, vertically or horizontally.

Do away with rewiring, downtime and costly production shutdowns! Specify *Bus Duct by BullDog.*



BULLDOG ELECTRIC PRODUCTS DIVISION
I-T-E CIRCUIT BREAKER COMPANY
BOX 177 • DETROIT 32, MICHIGAN

In Canada: 80 Clayson Rd., Toronto 15, Ont. Export Division: 13 East 40th St., New York 16, N.Y.

Products

High-Flow, Leak-Free Vacuum Valves

Diaphragm-operated vacuum valves in a new line are designed for applications where high flow rates and positive sealing are of primary importance. New valves are capable of sealing and holding vacuum to within .5 in. Hg absolute for an indefinite period of time. Vacuum valves are designed for actuation by any suitable pneumatic or electro-magnetic pilot, cycle control unit, or for remote manual operation. They are offered in flange or screw-mounted 2-way types, and in sizes up to 3 in. NPT. **Sinclair-Collins Valve Co., 454 Morgan Ave., Akron 11, Ohio.**

Write No. 26 on Inquiry Card—Page 32

Stronger, Lighter Insulating Firebricks

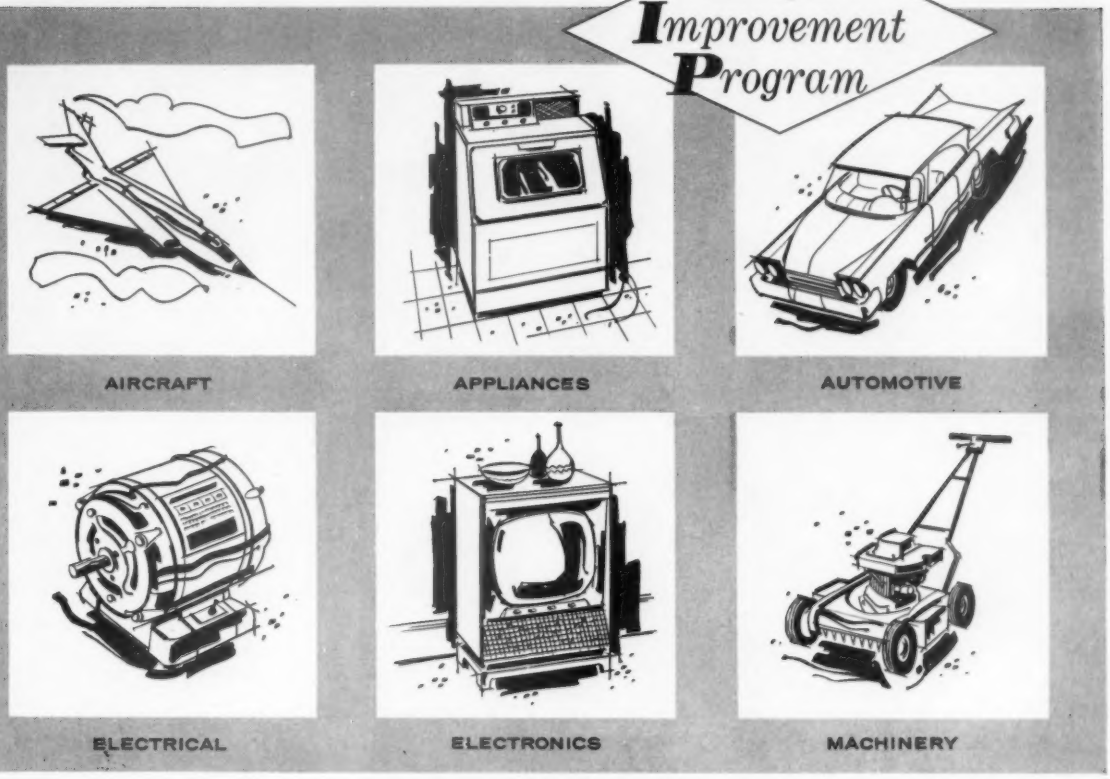
An improved insulating firebrick is stronger, lighter and lower in thermal conductivity. Firebrick was engineered to meet requirements of furnace builders and operators in the metals, structural clay, petroleum, chemical and glass industries. Mechanical strength of the refractory has been increased by more than 50% for one firebrick and 65% for a second. One weighs only 1.70 lbs. per 9 in. straight, the other 1.85. Both offer better mortar bonding and resistance to gas erosion. **Babcock & Wilcox, 161 E. 42nd St., New York, N.Y.**

Write No. 27 on Inquiry Card—Page 32

Whatever You Assemble . . .

Cost Reduction is Not Necessarily Profit Improvement

Profit Improvement Program



American's Profit Improvement Program shows you why:

Cost reduction is not necessarily achieved by purchasing the cheapest materials.

Fasteners are a good case in point. If you assemble mass production items, assembly costs represent 50% to 75% of manufacturing charges. Of these charges, direct labor eats up more than 80%, fasteners less than 20%.

Consider then, how profits shrink when fastener failures — stripped threads, broken heads, defective heat treating, and the like — result in "assembly down-time" and customer rejects.

American's attention to its own manufacturing quality is part of our Profit Improvement Program for you. Your American Screw Company representative can give you complete information on the ways you can apply this program to building your own profit improvement.

Profit Improvement Program

If assembly is a factor in your production, find out how American products and services can contribute to your own profit improvement program . . . in new products, new applications, new packaging, new quality control techniques. All working to build greater profits for you.

The Biggest News in Fasteners comes from

American
SCREW COMPANY

Willimantic, Conn. • Detroit, Mich. • Chicago, Ill.

For More Information Write No. 218 on Inquiry Card—Page 32

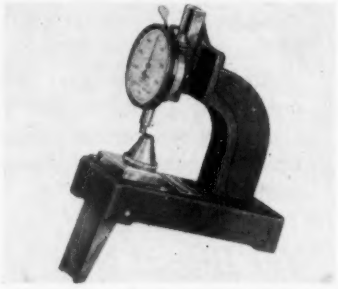
Products

New Precision Liquid Filter Cartridge

New scientific precision in filtration is possible with a new filter cartridge. Special synthetic fibers combined with a uniquely constructed filter media are said to assure true micron precision needed by the chemical process and other industries. Paint manufacturers who have already used the filter report it offers these advantages: space savings; high solids capacity, permitting uniform batch to batch and lot to lot production without over-cleaning; edgewise filtration that gives longer filter life and more complete filtering action; filtration equipment can be operated at lower pressure drops; less danger of batch contamination caused by cartridge collapse. At present the "Feutron" filter is made in a single size to fit either 9¾" x 2½" or 10" x 2¾" standard filters. **American Felt Co., Glenville, Conn.**

Write No. 28 on Inquiry Card—Page 32

Comparator Tilts for More Accurate Reading

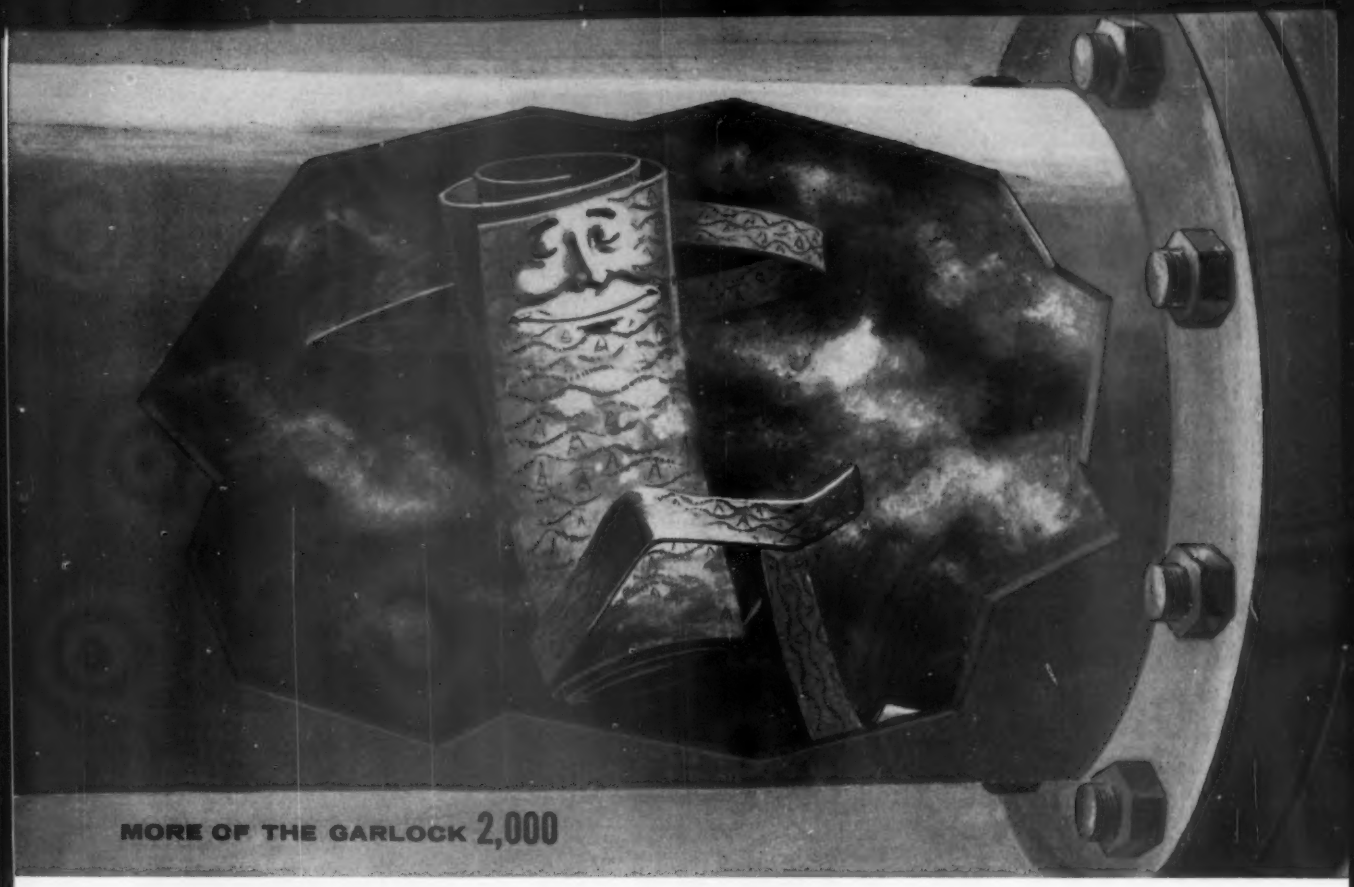


A new wide-range comparator tilts for more accurate reading.

(*Please turn to page* 108)

For More Information about ad on following page Write No. 220 on Inquiry Card—pg. 32→

PURCHASING

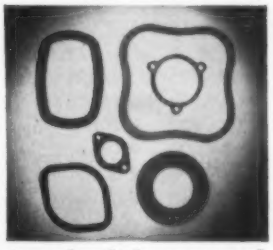


Right at home in high temperature (700°F.), steam or gases... GARLOCK "900" gasketing

Widely applied to pipe flanges, boiler manholes and handholes, gasketed joints on steam engines, compressors, internal combustion engines, pumps. Garlock "900" is made of long-fibre Canadian asbestos bonded with a special Garlock compound into a homogeneous structure. Resists plastic flow under heavy bolt load . . . excellent compressibility. Available $\frac{1}{64}$" to ¼" thick, sheet size from 40" x 40" to 120" x 120".

For Hot Oil Service. GARLOCK "7021" is more dense for service against hot oil at high temperature, steam and hot gases to 700°F. . . . also approved for use against gasoline, naphtha, benzine, fuel oils. Combines strong resistance to plastic flow with unusual compressibility. For pipe lines, steam engines, compressors, internal combustion engines, refinery equipment. Available in same size as "900" Series.

For Solvents and Oils to 300°F. Garlock neoprene bonded compressed asbestos sheet is excellent against solvents and oils to 300°F. Good compressibility and resistance to heavy bolt loads without excessive plastic flow. Available in style 7228 made from long fibre Canadian asbestos with high tensile strength; or in lower cost style 7098 made from medium length asbestos fibre. Both styles available in thicknesses from $\frac{1}{64}$" to ⅛".



High temperature gaskets are more of "the Garlock 2,000" . . . two thousand different styles of packings, gaskets, and seals for every need. Discuss applications with your local Garlock representative. Call him or write for Gasket Folder AD-162.

THE GARLOCK PACKING COMPANY, Palmyra, N.Y.

For Prompt Service, contact one of our 2(sales offices and warehouses throughout the U.S. and Canada.

GARLOCK

Packings, Gaskets, Oil Seals, Mechanical Seals, Molded and Extruded Rubber, Plastic Products

Canadian Division: The Garlock Packing Co. of Canada Ltd.

Plastics Division: United States Gasket Co.

Products

(*Continued from page* 106)

New model features a cast aluminum base with an angle support that may be folded out to tilt the whole unit 20 degrees upward from the horizontal. This gives straight-on, comfortable viewing of dial indicator and permits greater reading accuracy. Unit is best suited to on-the-spot checking in laboratory or shop. It can also be mounted easily on a bench for production line inspection. Larger frame permits greater rigidity and measuring capacity. **Petz-Emery, Inc., Pleasant Valley, N.Y.**

Write No. 29 on Inquiry Card—Page 32

"Twin" Circuit Breaker Load Centers

Two new "twin" circuit breaker load centers provide a safe method of combining simple- and three-phase branch circuits in the same load center. New devices incorporate a unique lug and single breaker stab unit physically isolated from the main bussing. This unit is used for connecting "high" leg of a 3-phase, 4-wire delta system. Breaker handle knockouts are so arranged that only single-handle, 240-volt breakers can be connected to high leg phase. As additional safety feature 3-phase breaker can be locked in "off" position. **General Electric, Plainville, Conn.**

Write No. 30 on Inquiry Card—Page 32

a new concept in motor protection!

GET TOTALLY ENCLOSED PROTECTION AT LESS COST WITH STERLICONE MULTI-SHIELDED DRIP-PROOF MOTORS!

STERLICONE MULTI-SHIELDED Motors, an exclusive development of Sterling Electric Motors, Inc., now make it possible to use drip-proof motors with full overload characteristics on many demanding applications... such as food processing, chemical, oil well pumping, and others involving corrosion, salt spray or similar atmospheric conditions that previously required TEFC protection.

STERLICONE MULTI-SHIELDED MOTORS – SHIELDED 5 IMPORTANT WAYS!

1 Flexible insulation is achieved by multiple application and controlled processing of a special silicone sealing compound to provide such a greater degree of environmental protection that these motors can be used for applications involving excessive moisture, salt spray, oils, most chemicals, corrosive agents or dust. Forming a smooth, flexible coil encasement, this insulation is permanently resilient, with high dielectric strength; it does not become brittle like other protective materials.

Heat dissipation is effected by means of the famous Sterling design of through ventilation. Because *STERLICONE* Shielding is of uniform thickness, heat is readily transmitted from the coils; moreover, since there is no bulky encapsulation, air may pass freely over, under, and around the end coils, resulting in a cool running drip-proof motor.

This new *STERLICONE* Shielding process has been thoroughly proven. Tested by an independent laboratory under conditions far more severe than would exist in most industrial applications, the performance of this new motor equals or exceeds that of totally enclosed designs.

2 Anti-corrosion coating provides extra protection for both rotor and fan.

3 Neoprene insulation shields all motor leads.

4 Neoprene gaskets and diaphragm seal terminal box against virtually all atmospheric hazards. Terminal box rotates 360° for easy access.

5 Sealed bearings are used... together with grease packing and labyrinth seal on the output shaft... for positive bearing protection and longer bearing life.

For initial savings, longer service life, lower required horsepower ratings and minimum maintenance, *STERLICONE* MULTI-SHIELDED Motors are your best buy. Get the facts about *STERLICONE* MULTI-SHIELDED Motors. Write for Bulletin 196.

STERLICONE MULTI-SHIELDED

STERLING ELECTRIC MOTORS, INC.

5401 TELEGRAPH ROAD • LOS ANGELES 22 CALIFORNIA

For More Information Write No. 222 on Inquiry Card—Page 32

ANNOUNCING

GRANODINE 663

FIRST AUTOMATED IRON PHOSPHATE PROCESS! *and it's "cold," too!*

NEWEST PRE-PAINT TREATMENT FOR STEEL

AUTOMATED GRANODINE 663—the industry's first—takes the human element out of quality control . . . replaces it with 100 percent electronic line control, every hour of every day! You get positive, electronic vigilance on the line that adds up to savings in time, labor and chemicals—yet overall coating uniformity and quality never varies!

COLD GRANODINE 663—the coldest yet—means on-the-line savings of 50 percent or more in heating dollars! Typical heat savings range from up to $12,000.00 per year on large volume lines, to $7,500.00 and $5,000.00 yearly on intermediate and smaller spray lines when compared to the cost of typical hot processes.

Put your phosphate processing on a more productive basis with the first completely automated phosphating line in the metalworking industry. Write, wire or phone your local AMCHEM representative for further information on cost-saving, time-saving Granodine 663!

Write for Bulletin 1698 on Granodine 663—contains eye-opening quality control data that will interest your company's financial experts!

AMCHEM

Automated

GRANODINE

another chemical development of

AMCHEM PRODUCTS, INC., Ambler 15, Pa.

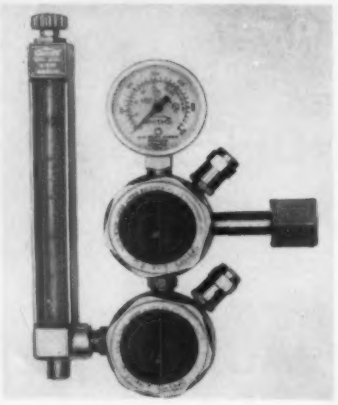
(Formerly American Chemical Paint Co.)

Detroit, Mich. • St. Joseph, Mo. • Niles, Calif. • Windsor, Ont. • Amchem and Granodine are registered trade marks of AMCHEM PRODUCTS, INC.

For More Information Write No. 223 on Inquiry Card—Page 32

Products

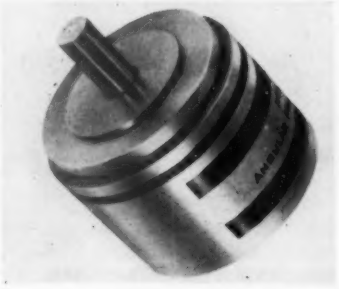
Flow Meter Regulators Save Argon and Helium



New flow meter regulators accurately measure argon and helium used in shielded inert gas welding processes. Gas-saving design combines two-stage regulators with separate direct-reading flow meters. Compensated for back pressure, flow meters are accurate within 2% of the full scale reading. Bodies of flow meters are forged aluminum alloy; meter tubes are stress-relieved Pyrex. Flow range for argon meter is 60 scfh, and for helium meter 200 scfh. **Smith Welding Equipment Corp., 2633 Fourth St., S.E., Minneapolis 14, Minn.**

Write No. 31 on Inquiry Card—Page 32

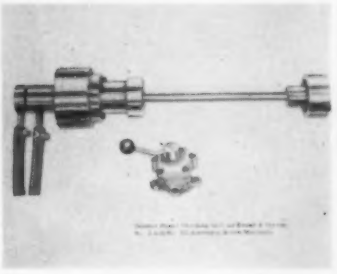
Miniature Angular Position Transducer



A new miniature angular position transducer utilizes the principle of variable reluctance to provide a means of obtaining an a-c output as a function of shaft rotation. Transducers are primarily designed for use in high accuracy, high performance servo systems for the continuous measurement and remote indications of rotary components such as control surfaces of aircraft or missiles, valves and scanners. Instrument is housed in a standard No. 15 servo mount frame. **Bourns, Inc., P.O. Box 2112, Riverside, Calif.**

Write No. 32 on Inquiry Card—Page 32

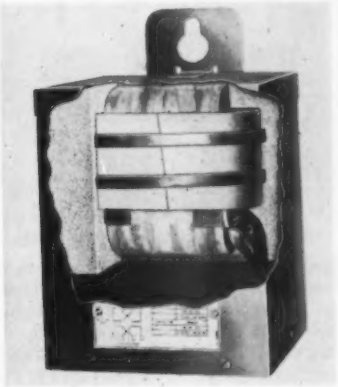
Power Chucking Unit for Screw Machines



A new power chucking unit makes it possible to convert Models 2 and 2G Brown & Sharpe automatic screw machines to air chucking. By addition of this unit, cold drawn and odd shaped parts can be chucked at higher speeds and less cost. Unit consists of 4 in. air chuck with two or three jaws, soft blank work-holding top jaws, a threaded draw bar, a rotating air cylinder, flexible air hose and fittings, a cylinder adapter, and 3-way control valve. Installation time is 90 minutes. **Skinner Chuck Company. New Britain, Conn.**

Write No. 33 on Inquiry Card—Page 32

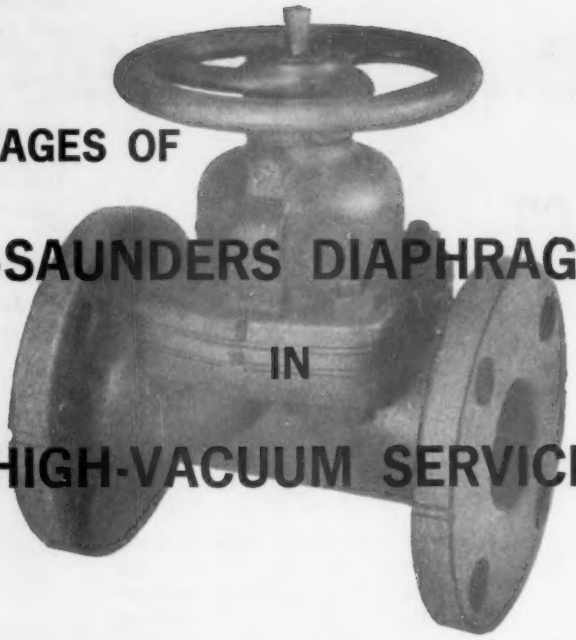
Quiet, Small Size Dry-Type Transformers



(Please turn to page 114)

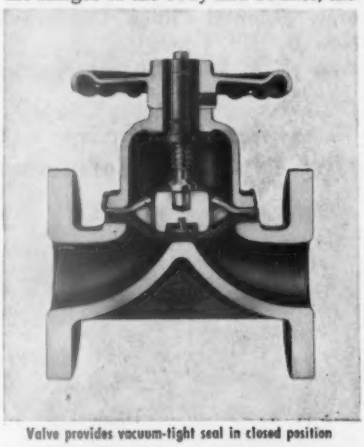
GRINNELL REPORTS ON VALVES:

THE ADVANTAGES OF GRINNELL-SAUNDERS DIAPHRAGM VALVES IN HIGH-VACUUM SERVICE



Dependable performance and long service life for vacuums down to 0.1 micron . . . with leak rates of less than 0.1 micron cubic foot/hour

One of the most important requirements of valves for high-vacuum service is that they must be vacuum-tight at all times during their operating cycle. Diaphragm valves of the Grinnell-Saunders manufacture fully meet this requirement. When clamped between the flanges of the body and bonnet, the

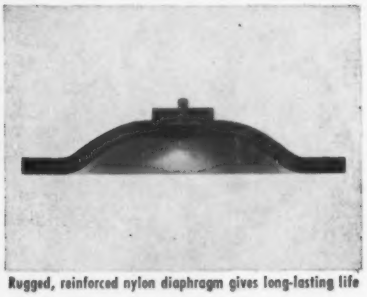


Valve provides vacuum-tight seal in closed position

diaphragm is easily made vacuum-tight down to 0.1 micron — with an in-leakage rate of less than 0.1 micron cubic foot/hour. Whether in the open, throttling or closed position, the diaphragm presents a smooth, unbroken face to the vacuum side of the chamber.

Rugged, nylon-reinforced diaphragms in a variety of materials

Grinnell has perfected a method of reinforcing its diaphragms with wear-resistant nylon. The result is a diaphragm that lasts longer at high-vacuum. The only part of the valve subject to service wear at any time is the diaphragm — which can easily be replaced in a matter of minutes, without removing the valve body from the system. Diaphragms are available in a wide choice of materials.



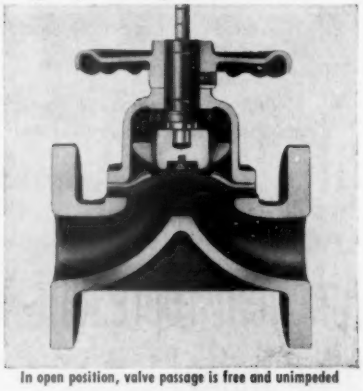
Rugged, reinforced nylon diaphragm gives long-lasting life

Contamination minimized

Construction of Grinnell-Saunders Diaphragm Valves provides separation of the working mechanism from the vacuum within the system. This isolation of lubricated working parts prevents contamination of the system from lubricant outgassing.

Large, unimpeded valve passage

The large passage of the Grinnell valve, in the open position, offers minimum impedance to the escape of random moving molecules in pumping down to high-vacuum, thus shortening the pump-down cycle.



In open position, valve passage is free and unimpeded

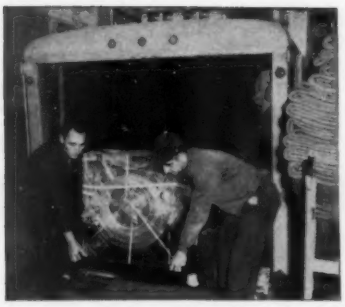
Special provisions:

Sealed bonnets are available for evacuation when required. Elastomer type diaphragms do not require evacuation of the bonnet. Valves with plastic diaphragms, used at elevated temperatures, do require evacuation of the bonnet for long diaphragm service life.

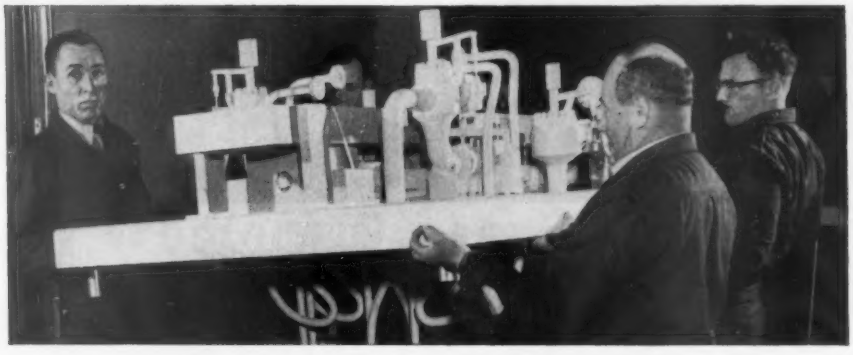
For more information

Get further facts about Grinnell-Saunders Diaphragm Valves. Learn, how the diaphragm lifts high for streamline flow in either direction . . . and how the diaphragm seals firmly against the body weir for leak-tight closure. Write to: — Grinnell Company, Providence 1, Rhode Island.

For More Information Write No. 225 on Inquiry Card—Page 32



Valuable exhibits like this precision scale model need Mayflower's moving skill.



Expert Handling of Model of Generator Prototype Impresses Westinghouse and Industrial Models, Inc.

America's Most Recommended Mover

● No need to risk having an investment of thousands of dollars lost through damage or late arrival. That's why both customer and display builder agreed this valuable model should be "entrusted to Mayflower." Experience proved there was no better way to ship such an important and elaborate exhibit . . . both were more than satisfied with the way Mayflower protected it.

Isn't this a significant tip for you when exhibits, high value equipment or household goods of your personnel need to be carefully moved?

The nearby Mayflower warehouse agent is the most competent man you'll find to help you. Why not call him soon!

AERO MAYFLOWER TRANSIT COMPANY, INC., • INDIANAPOLIS, INDIANA

For More Information Write No. 226 on Inquiry Card—Page 32

Products

(*Continued from page* 111)

A new line of dry-type distribution transformers features quiet operation and small size. Lightweight transformers are built in single-phase ratings 1 through 10 kva, 600 volts and below. The wound-core Form W element is placed in steel enclosure and completely covered with liquid epoxy resin to which filler and catalyst have been added. Resin hardens into block of insulating material solidly encasing the core and coil assembly, deadening sound and protecting it from dust, moisture and corrosive fumes. **Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo.**

Write No. 34 on Inquiry Card—Page 32

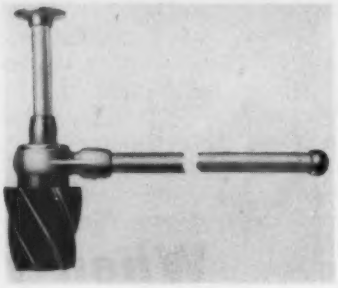
Large Base Air-Powered Router

An enlarged base and additional cutting accessories make a new model air-powered router a more versatile tool for straight and intricate contour cutting of metals, plastics, wood or honeycomb. Interior threads of base match those of motor casing, and power unit and base may be secured by tightening the adjusting plug screw to form a vibration-proof lock. Precise depth of cut adjustments can be made by loosening the plug screw. Other features include protective plating, full-grip collet, and self-cleaning operation. **Buckeye Tools Corp., 5003 Springsboro Pike, Dayton 1, Ohio.**

Write No. 35 on Inquiry Card—Page 32

Products

Spiral Hand Reamer for 3½ - 4 in. Pipe



A new spiral hand reamer is available for 3-1/2 to 4 in. pipe and conduit. Reamer smooths the inside edges, eliminating slow and costly hand filing. Ratchet handle speeds work in tight quarters. Seven spiral cutting edges pare off metal with minimum effort and no chatter. Hand grip has large pressure plate for comfortable application of body pressure when necessary. Hollow reamer construction reduces weight for easy carrying and handling. Hardened tool-steel cone is removable for sharpening. **Ridge Tool Co., Elyria, Ohio.**

Write No. 36 on Inquiry Card—Page 32

New General-Purpose Protective Coating

A new general-purpose, one-part neoprene rubber-based coating provides excellent chemical, abrasion and wearing resistance for the protection of metal, wood, concrete and some plastics. Coating has high adhesion to unprimed steel, concrete, wood and glass fiber-reinforced polyester plastics.

(*Please turn to page* 118)

A 2-WAY SAVING
ON THE RESISTORS THAT ARE SETTING TODAY'S QUALITY STANDARDS

1. Now you can get Stackpole Coldite 70+ Resistors IMMEDIATELY through 28 strategically located distributors — *at lower-than-factory prices for quantities up to 1,000 of a value!* This makes an ideal set-up for obtaining resistors for small runs, production emergencies, military prototypes and "hurry-up" engineering projects. And it saves you money in their procurement!

2. No other resistors can match Coldite 70+ for production line efficiency — because they're far and away the easiest resistors to solder by any method. This saves your company money on their use!

Coldite 70+ Resistors are the latest development of a firm which, since the early days of radio, has been one of the largest, most dependable resistor suppliers. Laid end to end, the resistors Stackpole has produced would extend around the world so many times you'd get dizzy counting them!

Coldite 70+ Resistors look good — and they're every bit as good as they look. They're unmatched for load life and moisture resistance. They're approved resistors — from a MIL-R-11 approved manufacturer. And now, for the first time in resistor procurement history, you can get such resistors in a complete line of RC-42 (2-watt); RC-32 (1-watt) and RC-20 (½-watt) styles FROM STOCK from leading distributors!

FOR ECONOMY AND CONVENIENCE on your smaller lot purchases, write, wire or call for name of nearest Coldite 70+ distributor with complete stocks of all 3 sizes, all 269 standard values, and all 3 standard tolerances.

Electronic Components Division
STACKPOLE CARBON COMPANY
St. Marys, Pa.

STACKPOLE
Coldite 70+
fixed composition RESISTORS

For More Information Write No. 230 on Inquiry Card—Page 32

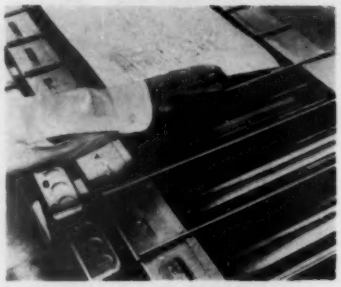
Products

(*Continued from page* 116)

Product is of gel-type consistency and can be applied by brush without diluting or stirring. When applied to vertical surfaces, it will not sag or flow. **Adhesives, Coating and Sealers Division, Minnesota Mining and Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.**

Write No. 37 on Inquiry Card—Page 32

Radiant Heater Features Quick Warm-Up



A new industrial radiant heater is engineered for quick warm-up and cool-off. Developed for drying, baking, curing and preheating, unit reaches full heating capacity of 800 to 850 degrees F within three minutes. Heater is designed for horizontal mounting above or below the process line. It emits high efficiency long wave infrared from wire coils enclosed in tubes of 96% silica glass, producing an average of 20 watts per sq. in. of working surface. Units can be easily interlocked in parallel series. **Corning Glass Works, Corning, N.Y.**

Write No. 38 on Inquiry Card—Page 32

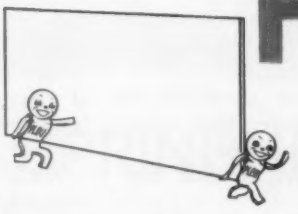
"Hope you didn't buy that on the strength of my promised orders, I just quit. . ."

AUTHORIZED PLEXIGLAS DEALERS
are located in these cities:

Atlanta, Georgia
Baltimore, Maryland
Boston, Massachusetts
Bridgeport, Connecticut
Buffalo, New York
Charlotte, North Carolina
Chicago, Illinois
Cincinnati, Ohio
Cleveland, Ohio
Columbus, Ohio
Dallas, Texas
Dayton, Ohio
Denver, Colorado
Des Moines, Iowa
Detroit, Michigan
Fort Worth, Texas
Grand Prairie, Texas
Hanover, Pennsylvania
Hartford, Connecticut
Houston, Texas
Indianapolis, Indiana
Kansas City, Missouri
Los Angeles, California
Louisville, Kentucky
Memphis, Tennessee
Miami, Florida
Milwaukee, Wisconsin
Minneapolis, Minnesota
New York, New York
Newark, New Jersey
Philadelphia, Pennsylvania
Phoenix, Arizona
Pittsburgh, Pennsylvania
Richmond, Virginia
Rochester, New York
Salt Lake City, Utah
San Antonio, Texas
San Diego, California
San Francisco, California
Seattle, Washington
St. Louis, Missouri
St. Paul, Minnesota
Syracuse, New York
Tampa, Florida
Washington, D. C.
Wilmington, Delaware

Best source of Service on Plastics...

AUTHORIZED PLEXIGLAS DEALERS



It pays to call an Authorized PLEXIGLAS® Dealer when you need plastics. Why? He provides complete service on PLEXIGLAS acrylic plastic, other plastics and a wide range of accessory products. He gives prompt delivery, and is qualified to help you with fabrication and technical information. And your Authorized Dealer has a stock that includes almost any size and thickness of PLEXIGLAS—clear and colored sheets . . . patterned, corrugated and extruded sheets. He is listed under PLEXIGLAS in the Plastics section of telephone directories in major cities.

Chemicals for Industry

ROHM & HAAS COMPANY
WASHINGTON SQUARE, PHILADELPHIA 5, PA.

In Canada: *Rohm & Haas Co. of Canada, Ltd., West Hill, Ontario*

For More Information Write No. 232 on Inquiry Card—Page 32

Let's Look At Records

How long does it take to file papers and cards in a purchasing office? Why is some record-keeping easier than others? Here are the answers.

Performance Yardsticks

	Pieces per Hour
Alphabetic Filing	
Sort cards to first letter	850
File cards previously sorted	350
Sort and file cards	198
Sort papers in flat sorter	540
Code and rough-sort letters	272
File papers previously sorted without fastening	270
File papers previously sorted by fastening to folders	160
Find papers	67
Numerical Filing	
Sort papers	506
File papers previously sorted without fastening	360
File papers previously sorted by fastening to folders	139
Sort and file papers	215
Subject Filing	
Code and file papers	100
File Papers	147
Soundex Coding (phonetic)	570

Based on statistical data compiled by Record Controls, Inc., Chicago, Ill.

THE SUBJECT of filing as an important phase of office operation has often been neglected as far as the average purchasing department is concerned. Too often, scant attention is paid to the productivity of clerical workers.

If someone does notice, it is usually in a vague sort of way ("Mary sure is a fast filer") without scientific basis for comparison. Illustrated here is a table designed to assist purchasing executives in establishing performance standards for their records clerks.

The proposed standards are composites of recent production figures obtained by Record Controls, Inc., a Chicago firm specializing in the field of records management.

There are many reasons why production figures differ from operation to operation and from company to company. Knowing some of these reasons will enable the purchasing executive to better understand deviations from standards by records clerks. Consequently, he will then be better able to decide what remedies, if any, should be applied.

- Typed cards or papers can be handled much faster than material written in longhand;
- Numerical filing is faster than coded filing;
- One-step sorting (one sorter tab for each guide tab) is faster than rough-then-fine sorting;
- Cards can be inserted faster into a 1000-card file than into a 10,000-card file.

Better Training

It should also be remembered that records clerks are of higher calibre, more intelligent, more experienced, better trained in some companies than in others. Working conditions (heat, light, noise, etc.) will vary from company to company and often from department to department.

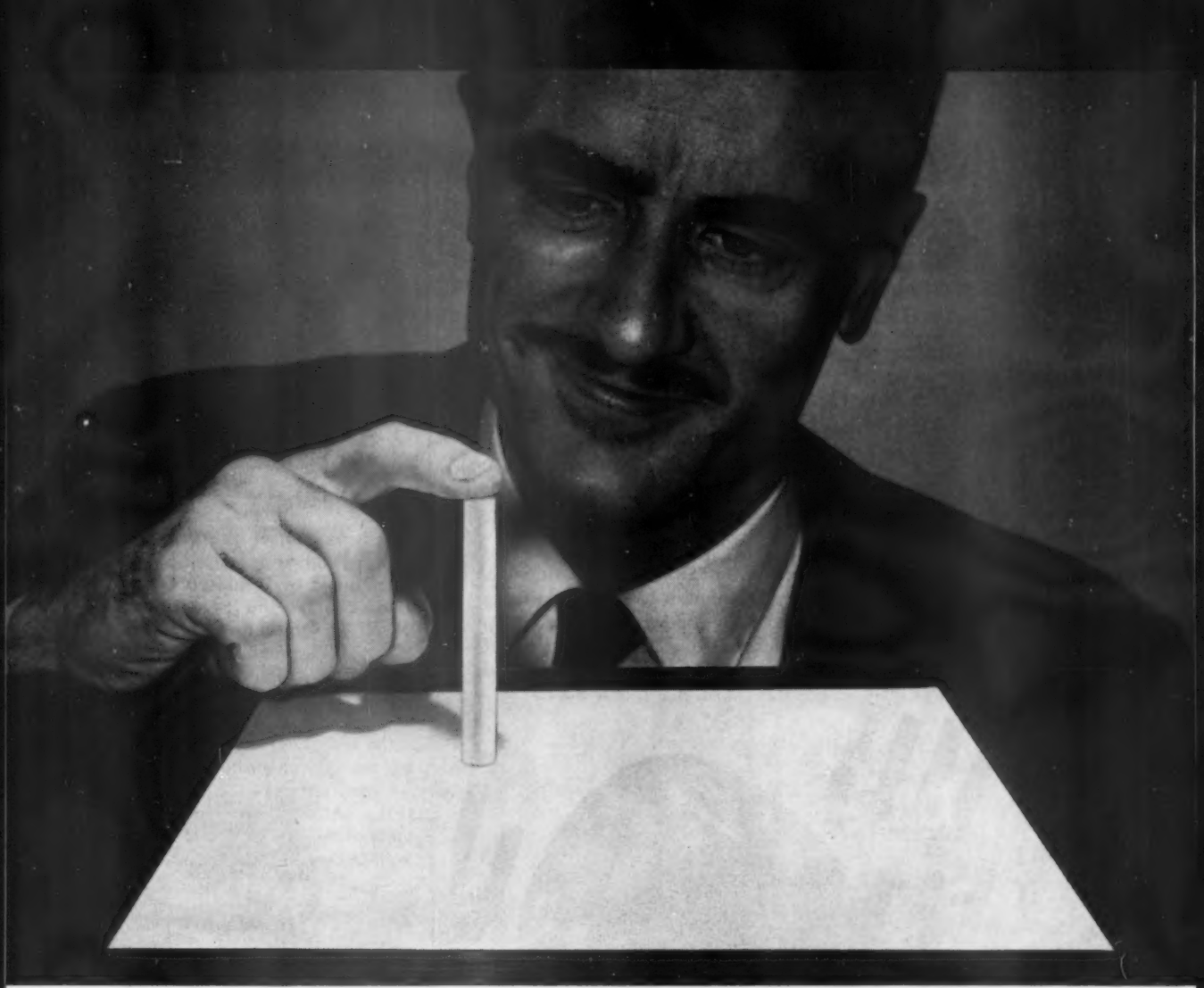
Psychological factors such as, quality of supervisors, pay rates, and fringe benefits are more satisfactory in some organizations than in others. These are the major factors which should be considered in checking the work of records clerks against the proposed standards representing average performance.

While checking, it may be uncovered that perhaps Clerk Lucy is sorting cards to the first letter at the rate of 1000 per hour and that Clerk Joan is sorting papers numerically at the rate of 356 per hour.

This may mean, in the case of Lucy, that she is (1) just naturally faster than the average clerk, (2) is working under unusually favorable physical and psychological conditions, or (3) is achieving speed at the expense of accuracy.

As for Joan, her slowness may stem from laziness or stupidity, but anyone who jumped to this conclusion could be very wrong. Investigation is called for in all such cases. The table of standards cannot be used arbitrarily to separate good clerks from incompetent ones.

For More Information about ad on following page Write No. 233 on Inquiry Card—pg. 32→



New SPRINGHILL® BOND is actually whiter than clean white chalk

—YET COSTS NO MORE THAN "OFF-WHITE" BONDS!

THE TRUTH IS, new Springhill Bond is measurably whiter than any other unwatermarked bond on the market. Whiter than chalk, salt, even surgical cotton. By actual laboratory test!

Hold a sheet of new Springhill Bond in your hand. Look at it. Feel it. Fold it. Tear it. You'll say this looks like a premium-grade bond. *Only the price and absence of a watermark say it isn't!*

Compare Springhill Bond for whiteness, finish, "crackle," *printability*. You'll buy no other brand.

New Springhill Bond, Mimeograph and Duplicator are made to order for small offset duplicating presses. Every ream-wrapped package comes with a handy pull-tape opener.

The new Springhill business papers are part of International Paper's new *first family of fine papers* packaged this convenient way. They include famous Ticonderoga Offset, Ticonderoga Text, International Ti-Opake and Springhill Tag, Index and Vellum-Bristol. Ask your paper merchant to show you samples.

Springhill Bond comes in pull-tape junior cartons—polyethylene-lined to control humidity.

Fine Paper Division **INTERNATIONAL PAPER** New York 17, N. Y.

Office Equipment

A small **offset press** that provides sit-down operation has been introduced by **Davidson Corporation, 29 Ryerson St., Brooklyn, N. Y.** The operator has access to all controls when sitting in front of the new machine. On the right are control buttons to start and stop the press. And also on the right is a lever extension operating the ink form roller. Additional features are available to enable it to perform even more automatically.

Write No. 39 on Inquiry Card—Page 32

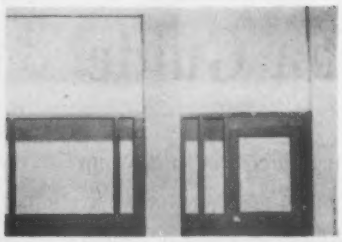
New plans for the sale, long-term leasing and financing of full-line, multi-unit **vending machine installations** has been announced. **Vending Industries, Inc., 15 West 57th St., New York** offers a vending operator the opportunity to set up a full-line, multi-unit vending installation and choose only those types and brands which he wants. Under the new system, a vending machine operator simplifies his purchasing and financing. He contacts one company, signs one contract and gets any model or brand he wishes.

Write No. 40 on Inquiry Card—Page 32

Every office printing machine needs this Paper Selection Guide

The Hammermill Graphicopy® "Paper Selection Guide" can save your time and make your office machines run smoother. Hang a copy near each printing or duplicating machine. Then next time you need paper, select the *right kind* from the list of 200 items in 19 different lines. Call your Hammermill supplier and simply order the paper you need by the number on the Graphicopy Guide. It's the easiest way to order paper you've ever tried. Hammermill Paper Company, Erie, Pennsylvania.

Office Equipment



A new **steel cornice** converts partitioners into floor to ceiling wall. Developed by the **Marnay Sales Division, Rockaway Metal Products Corp., 41 East 42nd St., New York, N. Y.**, the new cornice is designed to fit along the top of the steel panels. Although sheetrock or masonite can be used as extension material, sheets of fluted fibreglass are particularly effective for areas requiring extra light as well as privacy.

Write No. 41 on Inquiry Card—Page 32

How computer orientation **seminars** are conducted for users and non-users of data processing equipment is described in an illustrated brochure, titled "Invitation to Learning" offered by **Remington Rand division of Sperry Rand Corp.** The booklet outlines the various kinds of seminars, how they are conducted, and what subjects they cover.

Write No. 42 on Inquiry Card—Page 32

A new **folding machine** has been introduced by **Davidson Corporation, 29 Ryerson St., Brooklyn, N. Y.** Called the "Embee" the small size folder takes sheets up to 13¾ x 27, feeds automatically and has variable speeds. Simple attachments permit scoring, slitting, and perforating.

Write No. 43 on Inquiry Card—Page 32

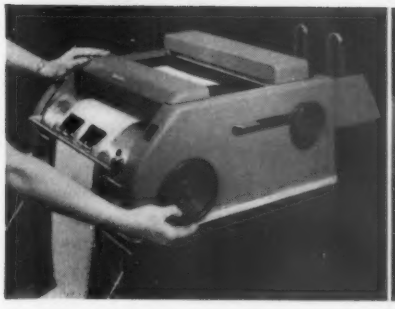
Only Moore's economy detacher has these unique features

The portable unit you can take to the job for on-the-spot use. Only 2 ft. x 2 ft., it's light in weight, high in speed, lets each department handle its own detaching jobs any place, any time. Ideal for small quantities, varying sizes and peak loads. For more details look up the Moore man in the telephone directory or drop a note to the Moore office nearest you.

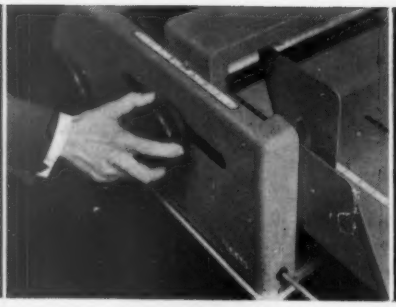
MOORE BUSINESS FORMS, INC., Niagara Falls, N.Y.; Denton, Texas; Emeryville, Calif. *Over 300 offices and factories throughout U.S., Canada, Mexico, Cuba, Caribbean and Central America.*

MOORE ®

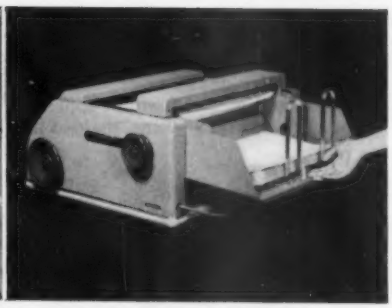
Speeditacher



Simple to load—And fast! Any office employee can load forms easily and quickly. Special operators aren't needed. There are no complicated parts to manipulate, no special equipment to move or adjust. A simple pull opens the handy feed tray.



Simple to set—Ease of operation is Speeditacher's crowning feature. A turn of the control wheel sets each form-depth instantly, without complicated adjustments. Form-depths 3 to 11 in. The forms stack neatly and compactly at finish of the run.



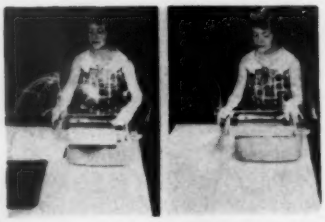
Simple to run—Precision detaching for form-depths from 3 to 11 in., from 4 to 16¾ in. wide. This simple and efficient unit makes continuous operation a reality for many who have not had it before. A new standard in smooth, quiet operation.

Build control with

MOORE BUSINESS FORMS

For More Information Write No. 238 on Inquiry Card—Page 32

Office Equipment



Time and motion studies on **multi-part business forms** have been announced by **Cromwell Rotary Forms, Inc., Albany, N. Y.** Using time exposure and stroboscopic light, a series of photographs were made to provide a visual record of the movements required by a stenographer in preparation of a four-part memo. The Cromwell study points up factors which are often overlooked in planning forms. Personnel fatigue is reduced, duplicate copies are always clean and distinct and initial cost is actually below the cost of second sheets and carbon paper. The study brings out the contrast in light patterns between the standard Cromwell 4-part memoset and the usual method of inserting carbons by hand.

Write No. 44 on Inquiry Card—Page 32

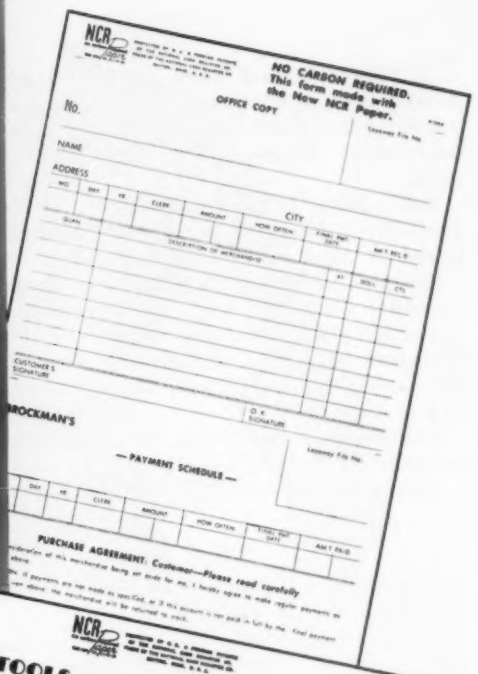
A unique item for the notebook keeper is being marketed by **Mutual Products Company, Inc., Worcester, Mass.** It is a combination **ruler and paper punch** which fits over the ring posts. The 12 inch ruler is fitted with spring steel punchers spaced to provide holes in paper to fit two- and three-ring binders. Holes at the base of the punches fit over the ring posts so that the ruler-punch can be at hand at all times.

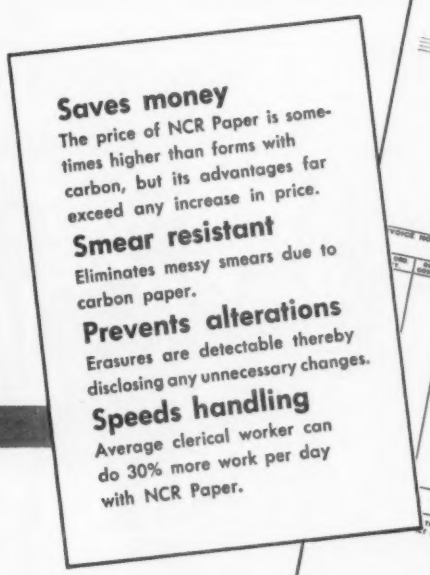
Write No. 45 on Inquiry Card—Page 32

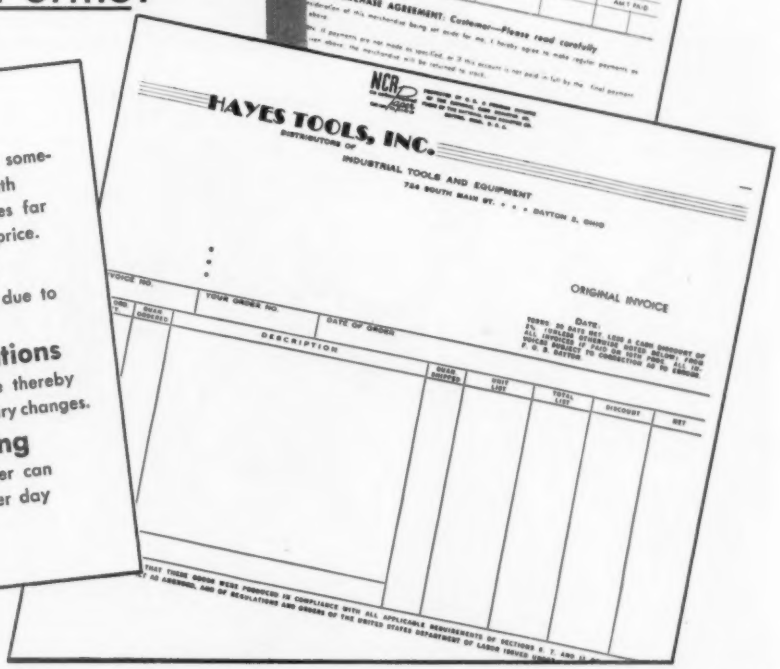
NCR Paper
no carbon required

NCR PAPER

saves time and money on all types of Business Forms!







NO MATTER WHAT BUSINESS FORM *is printed on NCR (No Carbon Required) Paper, you can be sure of cleaner, clearer copies in less time than with the old carbon paper method. No carbon is required, and you can obtain 8 or more copies on any business machine or typewriter.*

For free samples, call your local printer or forms supplier and test amazing NCR (No Carbon Required) Paper yourself.

1884 Of Business 75 YEARS 1959

THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio

1039 OFFICES IN 121 COUNTRIES • 75 YEARS OF HELPING BUSINESS SAVE MONEY

NCR PAPER ELIMINATES CARBON PAPER

For More Information Write No. 240 on Inquiry Card—Page 32

N.A.P.A. Convention: Los Angeles, May 22-25, 1960

SO THAT you will know them —here are the chairmen of the various committees for the 1960 convention. Standing left to right):

Early Birds Dinner and Banquet—Doug Boone, Los Angeles Board of Education

Reception—Howard H. Gagle, Carnation Company

Registration, Housing, and Transportation—H. J. Kashare, Dept. of Water and Power, City of Los Angeles

Service—Fred M. Pettit, Title Insurance & Trust Co.

Inform-A-Show—C. R. Raftery, Autonetics division of North American Aviation, Inc.

Entertainment and Dance—Monte C. Vinyard, Southern Calif. Gas Co.

Ladies Program—Walter A. Bazar, Moore Business Forms, Inc.

Seated in the front row (left to right) are:

Public Relations, Press, and Publicity—William Broker, Gough Industries, Inc.

General Vice Chairman—W. O. Hokanson Noland Paper Co., Inc.

General Vice Chairman—Charles S. Perkins, Union Oil Co. of California

General Convention Chairman—E. Benton Long, United States Lime Products Div., The Flintkote Company

General Program Chairman—Victor Quam, County of Los Angeles

Vice Program Chairman—Harlan E. Eastman, Beckman Instruments, Inc.

Secretary and Controller—Raymond W. Brick, executive secretary-treasurer, Purchasing Agents Association of Los Angeles.

The general convention committee for the 1960 N.A.P.A. convention is meeting regularly in Los Angeles to formulate plans. E. Benton Long is general convention chairman. Here's what he has to say: "The program will be of equal interest to one man purchasing departments, small business purchasing agents, and purchasing executives for large organizations."

YOU CAN'T BARGAIN WITH SAFETY

Wire Ropes may look alike... but it's performance that counts

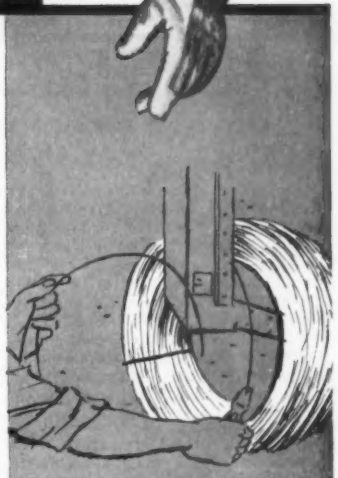
The Image of CF&I stands for the top performance records of all CF&I steel products. For instance, take one of these products—CF&I-Wickwire Rope.

Many brands of rope *look* alike but the rope you buy must pay off in *performance*, not *appearance*. With Wickwire Rope you get a number of quality factors that lead to outstanding performance. These factors are "built-in" the rope through many quality controls and tests. Since CF&I performs all steel producing, wire making and rope fabricating operations within its own plants, exacting control and testing procedures can be carried out and supervised at every step. Here is just one of these procedures:

Both-Ends Physical Tests

Samples are cut from both ends of every coil of wire and given complete physical tests — for tensile strength, roundness, torsion and uniformity of diameter. Coils that fail any test are rejected for such critical applications as wire rope.

We have recently printed several folders that discuss many more Wickwire control and testing procedures, plus wire rope recommendations for specific equipment. To get a copy, contact the nearest CF&I sales office—but please *state your industry or type of equipment.*



Both-ends testing of wire ensures safety and top performance in CF&I-Wickwire Rope.

WICKWIRE ROPE

THE COLORADO FUEL AND IRON CORPORATION 6958

In the West: THE COLORADO FUEL AND IRON CORPORATION—Albuquerque • Amarillo • Billings • Boise • Butte • Denver • El Paso
Farmington (N. M.) • Fort Worth • Houston • Kansas City • Lincoln • Los Angeles • Oakland • Odessa (Tex.) • Oklahoma City • Phoenix
Portland • Pueblo • Salt Lake City • San Francisco • San Leandro • Seattle • Spokane • Tulsa • Wichita
In the East: WICKWIRE SPENCER STEEL DIVISION—Boston • Buffalo • Chattanooga • Chicago • Detroit • Emlenton (Pa.) • New Orleans
New York • Philadelphia

CF&I STEEL

For More Information Write No. 241 on Inquiry Card—Page 32

Association News

William Davis (left), Rock Island Bridge, Division of Macomber, Inc., vice president of District 3, National Association of Purchasing Agents chats with Central Iowa president, A. E. Minor, Morrell & Co.

Hy Opper, Dx Sunray Oil Company (left) receives the congratulations of Don Foster, Midwest Metal Stamping Co. for winning the Central Iowa golf tournament.

GAVEL EXCHANGE—T. R. Sterrett of J. I. Case Company, Rock Island, Ill. and retiring president of the Tri-City Association of Purchasing Agents passes over gavel to incoming president, E. W. Collison, Montgomery Elevator Co., East Moline, Ill.

REJECTIONS ELIMINATED 100%...

Roller used by Holsclaw Brothers, Inc. End view shows Chase brass tube used as axle and bearing.

BY SWITCH TO BRASS FROM STEEL!

Trailer Maker Uses Chase Brass Tube for Rollers; Ends Material and Work Waste

When we asked Holsclaw Brothers, Inc. why they changed to brass from steel in making rollers for their boat trailers, here's what they told us:

"When we started to use steel, quite naturally we had certain inspection standards set up for the job. At first the steel split on both ends, and we started our usual procedure of rejection. In a very short time we learned that with practically 100% rejection we were not getting very much production. Ultimately, we simply had to lower our inspection standards. Now, since the change to brass, to the best of the writer's knowledge and information, our rejections are zero. Not only is each part up to the standards to which we aspired, but we have no material or labor loss due to rejected parts."

When you realize that Holsclaw uses a total of ten different sizes of roller assembly, and as many as 52 rollers per trailer, the savings realized by their switch to brass become highly important. These units are made on an exclusive Holsclaw machine which press-fits brass tube made by Chase into rubber rollers. The Chase® tube serves as an axle for the roller as well as a bearing surface.

There probably are many ways that brass, copper or an alloy can save you production problems or reduce costs. Your nearest Chase representative can give you specific recommendations. You can reach him at the Chase warehouse near you, or by writing Chase at Waterbury 20, Connecticut.

Chase

BRASS & COPPER CO. WATERBURY 20, CONN.
Subsidiary of ***Kennecott Copper Corporation***

THE NATION'S HEADQUARTERS FOR ALUMINUM • BRASS • BRONZE • COPPER • STAINLESS STEEL AND FORGINGS
Atlanta Baltimore Boston Charlotte Chicago Cincinnati Cleveland Dallas Denver Detroit Grand Rapids Houston Indianapolis Kansas City, Mo. Los Angeles Milwaukee Minneapolis Newark New Orleans New York (Maspeth, L. I.) Philadelphia Pittsburgh Providence Rochester St. Louis San Francisco Seattle Waterbury

For More Information Write No. 244 on Inquiry Card.—Page 32

Service is our best Salesman

Technical Assistance is Airlifted from QSM

● If you have problems in manufacturing an aluminum product, QSM will fly to the rescue. Want to know which alloys to use for a new product? What's wrong with the metal you are now using? How to overcome a snag in your production line? What kind of new machinery will serve you best?

Let us know of your problems. We will come up with ideas, information, and the help you need. In emergencies, one of our technical experts can be airborne in a matter of hours.

Naturally, there's no charge for this help. It's a routine part of QSM's service to you—the service that's our best salesman.

QUAKER STATE METALS CO. • LANCASTER, PA.

Division of HOWE SOUND COMPANY

Mill Producers of Aluminum Sheet and Coil

For More Information Write No. 245 on Inquiry Card—Page 32

Association News

Purchasing portion of head table at buyer-seller meeting in Birmingham consisted of: (left to right) C. E. Wiberg, president of association, David S. Gibson, James B. Harrington, Oscar M. Stagg, Jr., and C. Russell Keister.

Alabama P.A.'s Listen As Speaker Lectures Salesmen

The monthly meeting of the Purchasing Agents Association of Alabama was held as a joint session with the Birmingham Sales Executives Club.

First Vice President Jim Harrington introduced David S. Gibson, vice president purchasing, Worthington Corporation, Harrison, New Jersey who spoke on the subject, "A Purchaser's Appraisal of Salesmen."

Mr. Gibson went into detail with regard to Worthington's purchasing policy and listed four ways in which they judged a supplier:

(1) Is the prospective supplier a good company; that is, is it sound financially and of good reputation?

(2) Can they meet the specifications required?

(3) Is this company dependable as to price quotation, quality and delivery?

(4) Is the price right? The price being, in this case, the evaluated price.

Following this Mr. Gibson then took up the matter of what he, as a purchasing executive, looks for in a salemen. The attributes he most prizes in a saleman are:

- Know your product and its application.
- Don't waste time during calls.
- Know details about your own company.
- Use proper timing—call at the right time.
- Make proper impression on first call.
- Find out purchasing agent's problem first.
- Help purchasing agent justify in his mind reason for buying your particular product.
- Be sold on product you sell.
- Be dependable in what you say and don't be misleading.
- Never argue with the buyer.
- Be a good sport and be affable.
- Sell the right people in the organization in coordination with purchasing agent.

Mr. Gibson stated that an air of understanding between the purchasing agent and the salesman is most beneficial and most important.

P.A. Group Formed In New Jersey

Some 29 governmental purchasing agents met recently to make plans to organize a North Jersey Governmental Purchasing Agents Association.

Richard Quigley, purchasing agent for the City of Nutley was elected chairman. He will appoint a nominating and program committee to report at the next meeting, December 3.

Election of officers will be the main order of business at this second meeting. Anyone interested in joining the new group should get in touch with Mr. Quigley in Nutley, New Jersey.

DoALL ECONOMY SPECIAL

High-speed steel drill blank sets

Tolerance +.0002", −.0000"—Hardened and Ground
Every shop should have a complete set of these drill blanks. They can be used as an inexpensive substitute for plug gages when a tolerance of .0002" is sufficiently close. They can also be used as raw material for gage makers.

COMPARE THESE PRICES!

Set No. D-29B 1/16" through 1/2" by 64ths	$26.97
Set No. D-60B No. 1 through No. 60	22.60
Set No. D-26B A through Z	23.79
Set No. D-80B No. 61 through No. 80	6.35
Total price complete with metal containers: 135 pieces	$79.71

Sets may also be purchased individually at above prices.
Also available at standard prices—sizes 33/64" through 1" by 64ths. Tolerance +.0005", −.0000"; over-all length 6".

ATTENTION! KNOCK-OUT PIN USERS!

High Speed Steel
36" Lengths
Hardened and Ground.
Tolerance Plus or Minus .001"

Make your own knock-out pins. Ready to use—simply cut to length you desire. Standard sizes available from stock, 3/32" through 1/2" by 32nds. Special diameters and lengths can be furnished promptly. Also excellent for punches.

your largest selection
181 sizes carried in stock

For More Information Write No. 247 on Inquiry Card—Page 32

Association News

N.A.P.A. Appointments

The following changes on national committees were recently announced by the chairmen of the respective committees:

COAL

Southern Region—Committeeman: Robert I. Coe, The Mead Corporation, Kingsport Division, Kingsport, Tennessee.

FUEL OIL

Region No. 1, New England Area—Committeeman: John H. Corcoran, City of Cambridge, Cambridge, Mass.

Region No. 2, Seaboard Area —Committeeman: C. J. Chudosky, Huyck Felt Co., Div. of F. C. Huyck, & Sons, Rensselaer, New York.

Region No. 4, Ohio Valley Area —Committeeman: L. W. McAndrews, Pittsburgh Steel Company, Pittsburgh, Pennsylvania.

PUBLIC RELATIONS

Chairman, District No. 8: Lionel C. Mercier, ITT Laboratories, Nutley, New Jersey, replacing D. C. Robinson.

STEEL

Robert D. Crane, Dresser Industries, Inc., Dallas, Texas, replacing R. C. Kelley.

VALUE ANALYSIS-STANDARDIZATION

Chairman, District No. 6: Wilbur L. Betz, The Buckeye Steel Castings Company, Columbus, Ohio, replacing R. S. Rice.

Chairman, District No. 7: J. E. Clark, Gulf Oil Corporation, Atlanta, Georgia, replacing C. C. Sisk.

Vice Chairman, District No. 9: Raymond Lawson, American Bosch Arma Corporation, American Bosch Division, Springfield, Mass.

Legal Expert Talks Before Ann Arbor P.A.'s

Professor G. O. Dykstra, of the School of Business Administration, University of Michigan, was the principal speaker at a recent meeting of the Ann Arbor Purchasing Agents Association. His subject was, "The Legal Aspects of Purchasing."

The principal theme was the difference between the Uniform Sales Act, which is accepted by thirty states and the proposed Uniform Commercial Code which is being prepared by the various bar associations. It has been accepted by three states, with the hope that it will be approved by the legislatures of all fifty states.

Professor Dykstra stressed the importance of reading the fine print on the contract of an offer to buy and the contract of an offer to sell.

He concluded his talk by giving examples of the differences between Statute and Common Law.

Rocket Value Analysis

(*Continued from page* 85)

Again and again, he and the others stress that they aren't knocking missile contractors.

"Nobody can come up with all the good ideas about how to get a job done on the day it's started," they say. "If this were true, we would have skipped the Model T and built the Cadillac from the beginning.

Fight Against Inertia

"Like any idea men, however, we fight to overcome inertia. A missile has mass, hasn't it? and doesn't mass have inertia? Well, human beings have mass, even in their brain cells, and sometimes we find a little inertia there also."

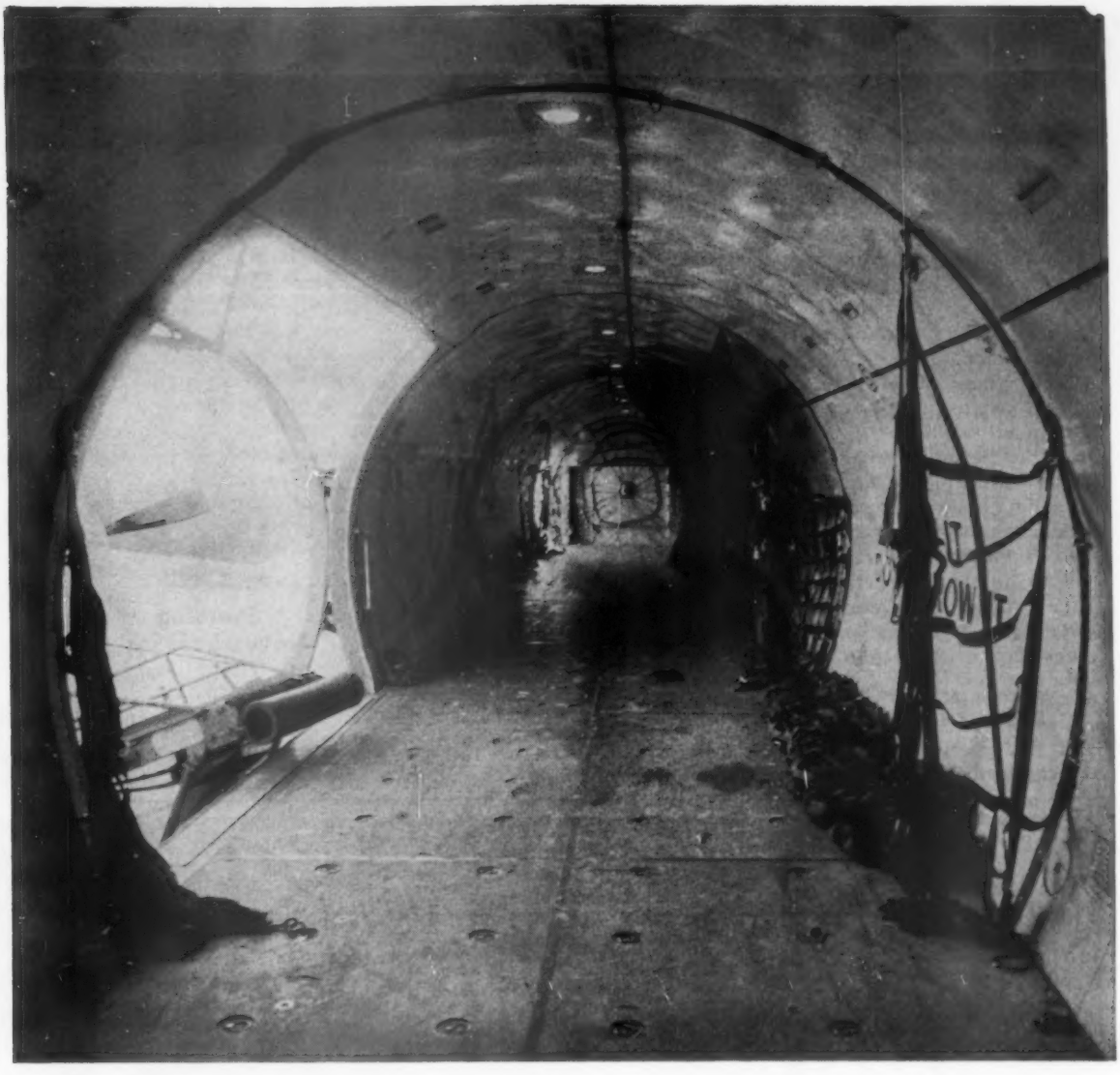
Capt. Ashley says, "When somebody asks us why they need an office like ours, I sometimes recall 'The Case of the Brass Cannon Cap.'

"For hundreds of years, cannoneers all over the world covered the mouths of their cannon with a handsome, heavy brass cap that screwed over the end of the barrels," he says.

"What was the cap for? To keep out dust and moisture. Why use a brass cap? Naturally, because everybody had always used a brass cap. When somebody finally asked, 'How come?' and really meant it, they found that a piece of canvas and a string would serve just as well.

"In fact," he adds, "why not just hang a hat over the barrel? Won't it keep off the rain and dust?

"It might save a little money, too."



This way out...of bottlenecks

AiResearch Manufacturing Divisions of The Garrett Corporation had the problem facing industry today... how to cut inventory to a minimum yet maintain production in the face of costly changes and vendor delays. The premium transportation then used was slow and undependable. Production bottlenecks occurred.

Management decided to move all critical parts by Emery Air Procurement Service. Emery's round-the-clock, door-to-door service proved to be fast, dependable and, at weights moved, it cost about the same as other air freight.

Perhaps Emery can help you in your procurement, distribution or promotion. Call or write us today. Offices in all major cities.

SEE WHAT YOU SAVE!*

	2500 Mi.		1700 Mi.		700 Mi.	
	Emery	Air Express	Emery	Air Express	Emery	Air Express
50 lb.	$25.54	$39.70	$20.93	$28.50	$14.77	$12.50
100 lb.	40.90	77.40	32.30	55.00	20.10	23.00
200 lb.	73.00	154.80	55.20	110.00	31.80	46.00

*Rates apply to most commodities between most major cities.

EMERY AIR FREIGHT CORPORATION

801 Second Avenue, New York 17, N.Y. • National and International Blue Ribbon Service.

For More Information Write No. 249 on Inquiry Card—Page 32

When Are Suppliers Guilty?

(*Continued from page 87*)

pay the expenses of "rolling" the sheet and make a profit out of the price at which Alcoa itself sold the sheet.

The government insisted in this argument that the rolling costs of Alcoa were a fair measure of the costs of competitors and further, the government contended, competitors had to meet Alcoa's price for all grades of "sheet" and could not buy ingots elsewhere.

Of this the court remarked that it was reasonable to suppose that the rolling costs of Alcoa were no greater than those of competitors. Also, that although it was theoretically true that imported virgin aluminum ingots were always available they could be had at prices very little less than those of Alcoa.

Define Price Squeeze

Of the effect of this squeeze campaign, the court remarked, "The government describes as a price squeeze a practice by which, it says, Alcoa intended to put out of business the manufacturers of aluminum sheet who were its competitors. Alcoa was itself a large—in fact much the largest—maker of that product and had been the first to introduce it many years before the period in question.

"The challenged practice ended with the year 1932, shortly after the Department of Justice took up the complaint of several sheet makers and began to investigate. The government asserted this squeeze had been in operation for a long time before that date and that by means of it 'Alcoa' had succeeded in eliminating four out of the eight competitors which competed with it."

In conclusion the court said, "As to the price squeeze itself, Alcoa insists that even if it was unlawful, it has been discontinued now for 12 years and that there is no likelihood that it will be resumed.

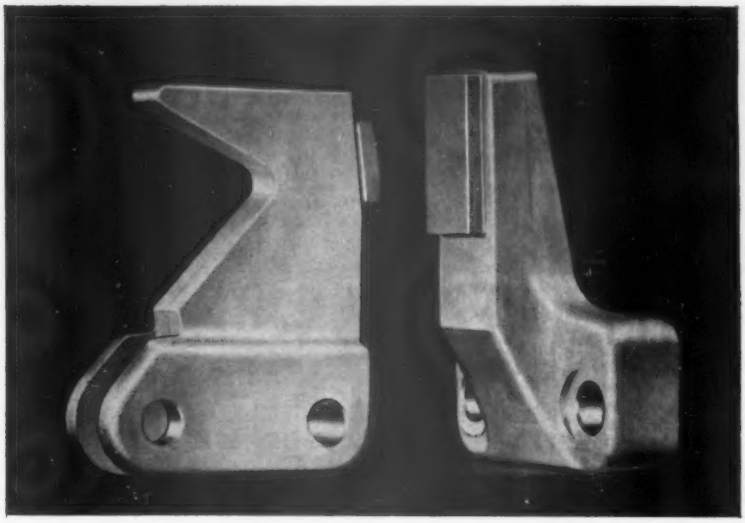
"Alcoa might add that since there can be no squeeze if sheet rollers can buy ingot at competitive prices, there can be no need of an injunction if that privilege is assured to them. That since it will be assured to them when the final judgment is entered, an injunction would only bring coals to Newcastle.

"It is enough here to say that since Alcoa abandoned the squeeze only after it became aware that it was under investigation, it is in no position now to complain of whatever stigma there may be in the injunction. In such a situation there is no place for sensibilities, nor should lapse of time secure immunity. More can be said for the argument that Alcoa will be unable to squeeze at all, if it loses its monopoly."

Starting in the November 9th Issue— A Three Part Series On Purchasing's Newest Cost Reduction Tool

TWICE-WROUGHT METAL

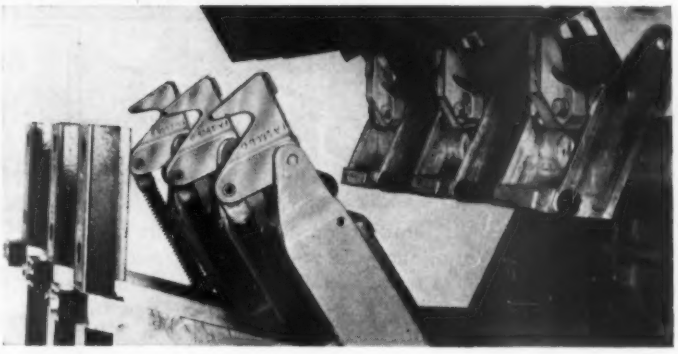
of die-pressed forgings helps Federal Pacific make new air circuit breakers more rugged—cuts machining costs in half

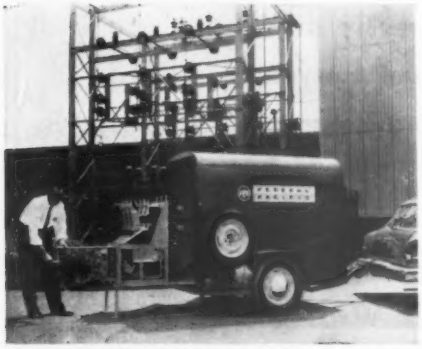


In its new Type DST magnetic air circuit breaker line, Federal Pacific Electric Company, Newark, N. J., builds in dependable operation and long life with parts of outstanding mechanical and adequate electrical properties.

Typical of this attention to detail are the arcing contacts (left). Similar parts previously used had been castings or built-up assemblies. Now the contact bodies are Anaconda Forging Brass-250 die-pressed forgings. The twice-wrought metal is denser, stronger, withstands mechanical shock better—reducing the fatigue factor and producing longer service life. The contacts also have higher conductivity. And best of all, their consistent dimensional accuracy and smooth finish cut machining costs in half.

RIGHT: Movable arcing contact assemblies at the left and the stationary arcing contact assemblies at the right in a 5-kv Federal Pacific Type DST air circuit breaker. They have a momentary current-carrying capacity of 60,000 amperes. Contact tips of tungsten alloy are silver-soldered to the forgings. These are two of several areas where Federal Pacific uses the superior physical properties of Anaconda die-pressed forgings to help provide dependable operation and long service life in its line of metal-clad switchgear.





Federal Pacific takes its circuit breakers out to industrial and electric utility customers. Here a representative sets up a demonstration of a 5-kv, 1,200-amp breaker in the field.

IT IS often easier than you think to achieve high quality and performance while simplifying fabrication and cutting over-all costs. American Brass technical specialists are constantly working with designers, production engineers and buyers, helping them meet their joint requirements—through the use of such Anaconda mill products as die-pressed forgings, extruded shapes, special-shape tubes. For this kind of practical help, see your American Brass representative or write: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Toronto 14, Ontario. 6944

ANACONDA®

COPPER • BRASS • BRONZE

NICKEL SILVER • MILL PRODUCTS

Made by The American Brass Company

For More Information Write No. 252 on Inquiry Card—Page 32

Employment Service

PURCHASING ASSISTANT

Large corporation needs assistant purchasing agent for their central purchasing department. College graduate, experience in purchasing printing, stationery, furniture, and office machines. Must have administrative ability, and be interested in and capable of developing the skills required to handle important line and staff assignments. Send resume to: Box 528.

Experience: Three years die room experience. Two years production planning. Five years purchasing agent in tool & die industry. Well versed in cost analysis, vendor selection & P.O. negotiations covering steel, castings, mill supplies, perishable tools, MRO supplies plus capital investments. Drawing board experience, also inventory control & traffic. Capable of setting up own purchasing dept.
Education: Five years G.M. institute in mechanical and industrial engineering and bus. adm.
Will relocate, but prefer Mich.
Write: Box 467

Experience: Ten years with major pharmaceutical company. Six years senior production chemist. One year ass't compounding mgr., one year systems work. Last two years ass't to director of purchasing with buying responsibility in several areas including raw materials.
Education: B.S. chemistry, M.B.A. management.
Will relocate.
Write: Box 449

Experience: Eight years top diversified industrial and marine purchasing experience, including contract procurement and dept. supervision. Also, experienced in expediting, traffic, receiving, and material control. Well rounded background in procurement of all types of material for various industries including major machinery and equipment to govt. specifications. Licensed marine engineer. Able negotiator. Age 35.
Education: B.A. degree—also marine engrg. at maritine academy.
Will relocate.
Write: Box 464

Experience: Fourteen years in engineering and value analysis work in one of country's leading corporations. Heavy experience in preparation and teaching value analysis with group that pioneered the technique. Will fit well in new or well-established program. Top references.
Education: B.S., E.E
Will relocate.
Write: Box 465

Experience: Six years as plant purchasing agent for all types plastic molding and missile component assembly. Twenty years experience in production, inventory control, and expediting. Can set up perpetual inventory control system.
Education: Company courses in manufacturing procedure, business administration and industrial psychology.
Will relocate.
Write: Box 454

Experience: Canadian citizen with 18 years broad and extensive experience in all phases of varied purchasing administration wishes to relocate. Broader scope and responsibility required. Presently and for past five years employed as director of purchasing for large Canadian co. Salary range $12,-000 per year.
Will relocate.
Write: Box 440

Listings in this department are offered without charge. Both purchasing department personnel interested in changing jobs and employers in search of replacements or additions to their departments may take advantage of this service. When writing, specify whether you want the applicant's form or the employer's form. Address all correspondence—whether for forms, or in answer to an employment advertisement, to: Box No., Employment Service Department, PURCHASING Magazine, 205 East 42nd Street, New York 17, New York.

ADMINISTRATIVE TRAINEE

College trained man, 24-28 years old, to assist purchasing vice president of large Chicago mfr. Unusual opportunity for capable, aggressive person. Write: Box 529.

Experience: Eight years purchasing, including: two years expediting; six years buyer of valves, plumbing supplies, cafeteria supplies & equipment, safety equipment, janitorial supplies clothing. Also supervised six buyer's, four years engineering experience in machine design division, one year clerk typist.
Will relocate: Prefer San Francisco area.
Write: Box 463

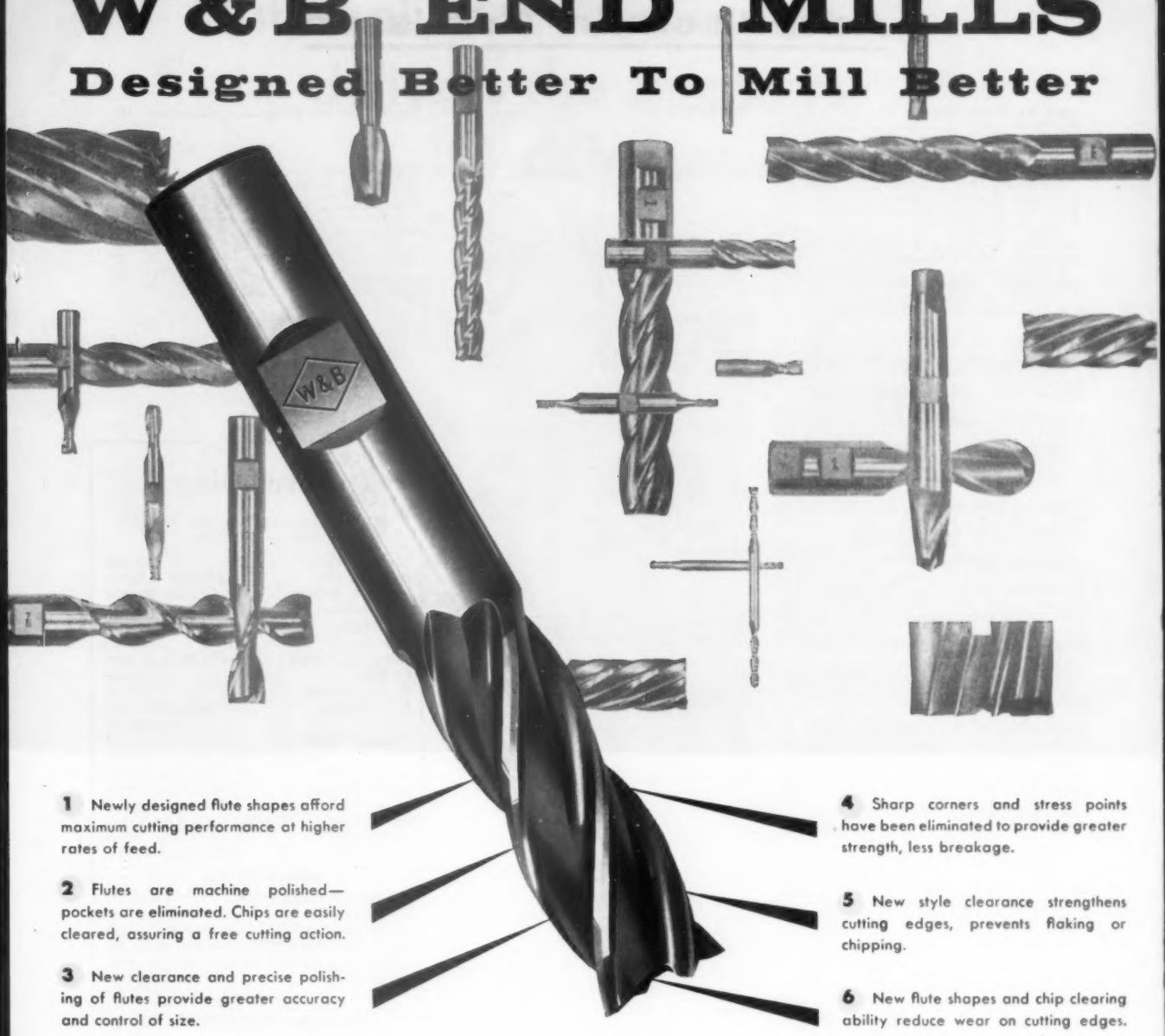
Experience: Three and one half years expediting and purchasing guided missile parts and automotive antenna parts. Items include raw material, hardware and fittings, gases, plastic molded parts, copper, stainless steel and iron pipe fittings. Also experience in planning and scheduling. Desire asst. P. A. job.
Will relocate: anywhere but New York metropolitan area.
Write: Box 450

Experience: Fourteen years director of large purchasing organization, responsible for all procurement necessary for continuing operations of various plants. This includes various remodelling and construction projects. Responsible for stores administration, perpetual inventory control, purchasing budgets and other related duties. Also wide experience in accounting and cost accounting.
Education: Bachelor of Commerce degree, also degee in purchasing from accredited university.
Will relocate.
Write: Box 466

For More Information about ad on following page write No. 258 on Inquiry Card—Page 32→

W&B END MILLS

Designed Better To Mill Better



1 Newly designed flute shapes afford maximum cutting performance at higher rates of feed.

2 Flutes are machine polished—pockets are eliminated. Chips are easily cleared, assuring a free cutting action.

3 New clearance and precise polishing of flutes provide greater accuracy and control of size.

4 Sharp corners and stress points have been eliminated to provide greater strength, less breakage.

5 New style clearance strengthens cutting edges, prevents flaking or chipping.

6 New flute shapes and chip clearing ability reduce wear on cutting edges.

Every Feature Says Compare!

Try W & B end mills on your milling operations . . . a comparison will demonstrate their superior performance. Your local W & B distributor carries a complete stock of standard, off-the-shelf types and sizes. He offers you the best in service and delivery on end mills for any standard application—so, to make your own performance comparison, call your industrial distributor today!

W&B

INDUSTRIAL DISTRIBUTORS SERVING INDUSTRY ECONOMICALLY THE RIGHT HAND OF PRODUCTION

PARTNERS IN PRODUCTION PROGRESS

WHITMAN & BARNES

MAKERS OF FINE TOOLS SINCE 1848

DRILLS AND REAMERS

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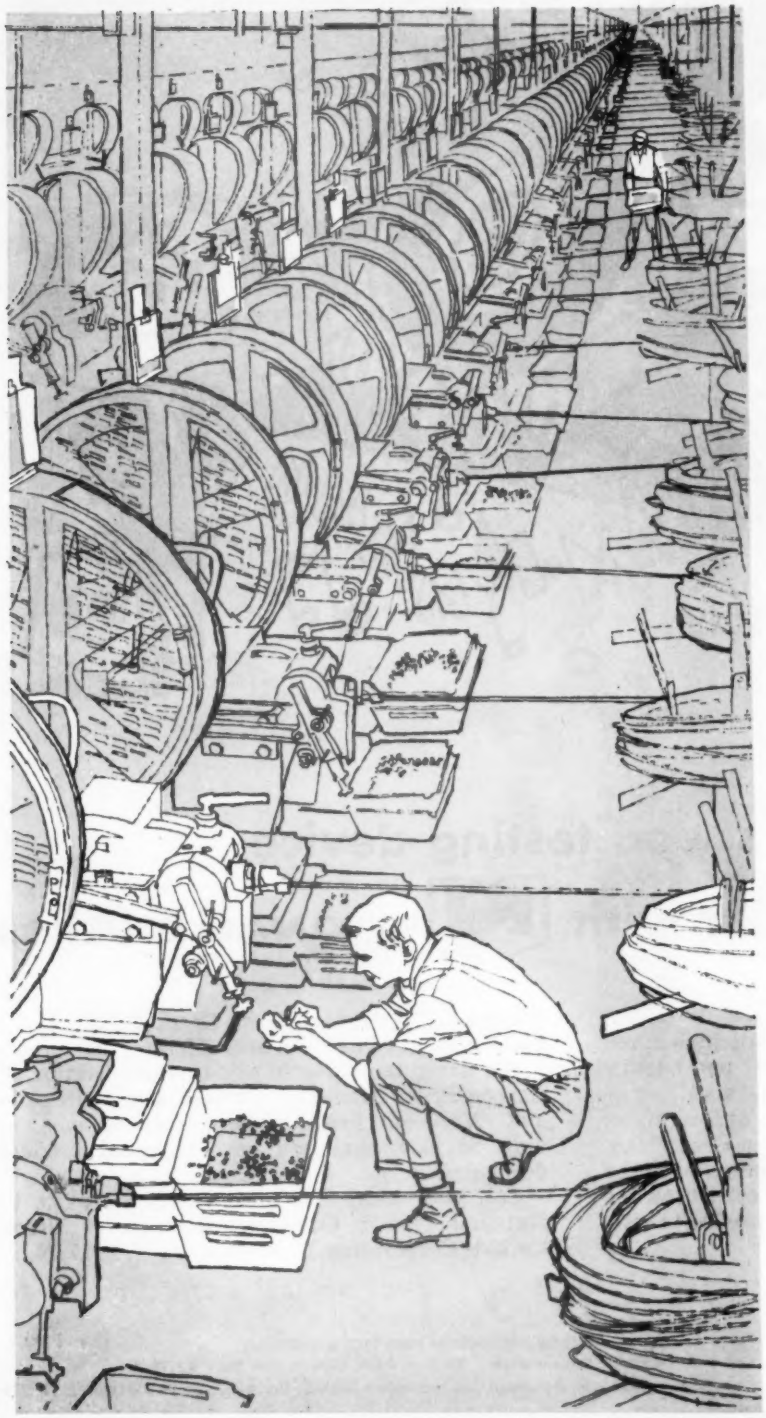
National Lock Company delivers the goods to 101 different industries



At left is shown one department in National Lock Company's huge new fastener plant, providing a total of 14 acres of manufacturing space. • Here, screws and bolts of every conceivable standard type, size and specification are made for use in a wide variety of products. Here, following their development by a large group of skilled fastener engineers, special purpose screws and bolts for specific requirements are also produced. • In many cases, shipments each day are geared to the daily requirements of National Lock customers. • Through the years NATIONAL LOCK COMPANY has proved to be a dependable, capable supplier to American industry.

- FASTENERS
- PLASTICS
- THERMO PLASTICS
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- LOCKSETS AND LOCKS
- BUILDERS HARDWARE

"All from 1 Source"

NATIONAL LOCK COMPANY
ROCKFORD, ILLINOIS

For More Information Write No. 259 on Inquiry Card—Page 32

High speed testing device lasts 500% longer with NATIONAL brushes

JOHN GIBB

Commutator burn-outs slowed development of this high speed *spinner* for testing and balancing wheels. This was a specialized application, says "National" Carbon Brush Man, John Gibb. He worked with the customer to apply a brush grade best suited for the job. A more versatile brush was needed to cope with widely fluctuating loads.

The choice: "National" Brush Grade F-72.
The result: up to 500% longer life.

It's never too early to call in your "National" Carbon Brush Man. His specialized knowledge — *and "National" long-term brush development* — may be just what you need to speed product development.

Call your local "National" office or write to National Carbon Company, Division of Union Carbide Corporation, 30 E. 42nd St., N. Y. 17, N. Y.

GAYLORD PROBES THE UNIVERSE FOR PACKAGING IDEAS

A galaxy of well-equipped Gaylord researchers constantly scans the packaging world, searching out answers to container problems that seem light-years away today.

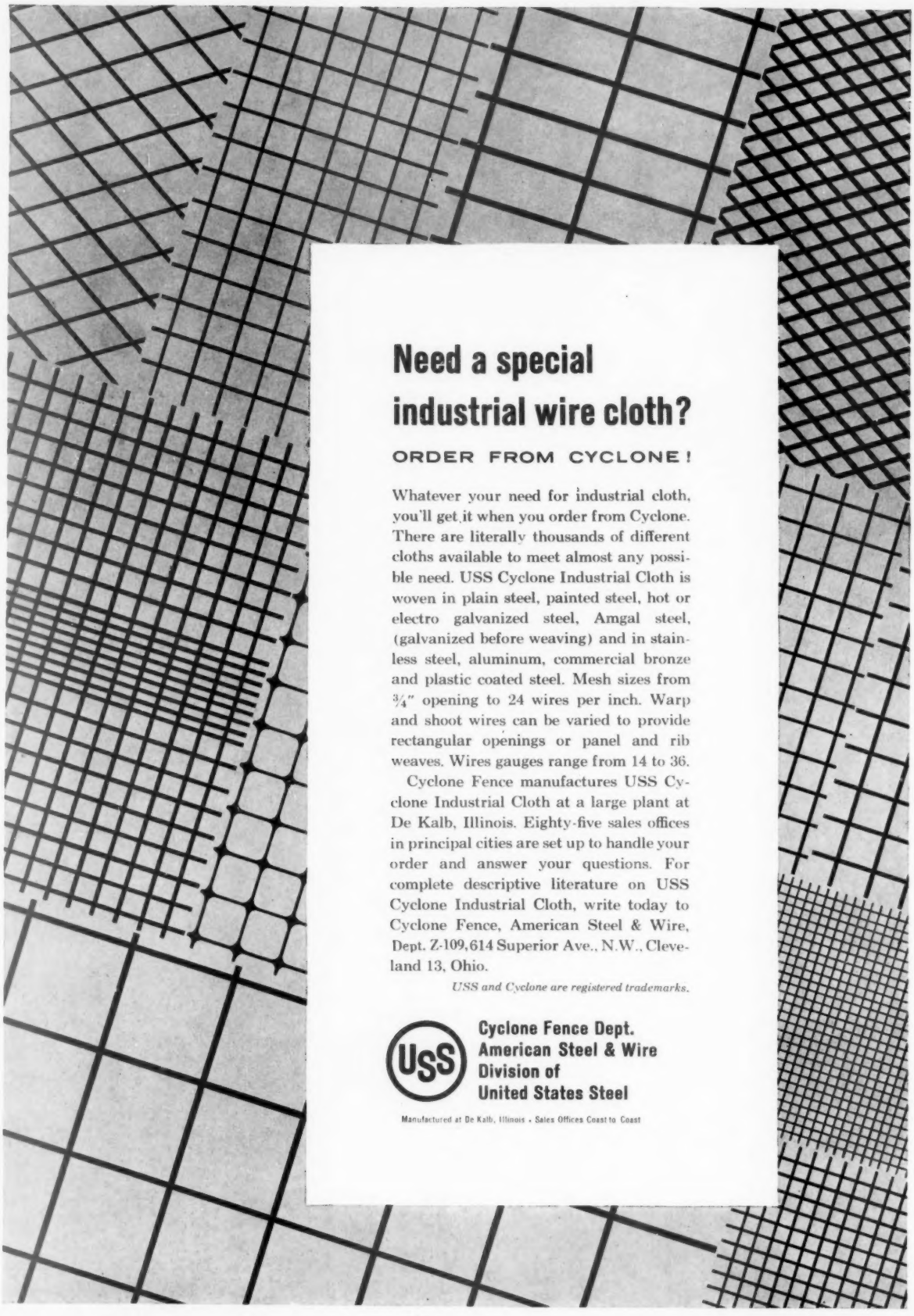
If you're shooting for the moon in your packaging operation . . . or merely want down-to-earth counsel right now . . . call your nearby G-Man today.

GAYLORD
CONTAINER CORPORATION

Gaylord Boxes

HEADQUARTERS, ST. LOUIS
PLANTS COAST TO COAST

DIVISION OF **Crown Zellerbach Corporation**



Need a special industrial wire cloth?

ORDER FROM CYCLONE!

Whatever your need for industrial cloth, you'll get it when you order from Cyclone. There are literally thousands of different cloths available to meet almost any possible need. USS Cyclone Industrial Cloth is woven in plain steel, painted steel, hot or electro galvanized steel, Amgal steel, (galvanized before weaving) and in stainless steel, aluminum, commercial bronze and plastic coated steel. Mesh sizes from ¾" opening to 24 wires per inch. Warp and shoot wires can be varied to provide rectangular openings or panel and rib weaves. Wires gauges range from 14 to 36.

Cyclone Fence manufactures USS Cyclone Industrial Cloth at a large plant at De Kalb, Illinois. Eighty-five sales offices in principal cities are set up to handle your order and answer your questions. For complete descriptive literature on USS Cyclone Industrial Cloth, write today to Cyclone Fence, American Steel & Wire, Dept. Z-109, 614 Superior Ave., N.W., Cleveland 13, Ohio.

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Division of
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